



# The Antiquary.



OCTOBER, 1896.

## Notes of the Month.

THE List of the Society of Antiquaries for the present year has been issued. From it we gather that there was a slight increase of two Fellows on July 1 (when the list was made up), against the number on the same date last year, the numbers being 696 in 1896, as against 694 in 1895. These figures are made up of 30 Fellows elected during the year, while 26 have died, and 2 resigned. There were in 1895 4 royal Fellows besides the patron (Her Majesty the Queen), 34 honorary Fellows (foreign), 139 compounders, and 576 annual subscribers. The numbers this year show the patron and the royal Fellows as last year, with 33 honorary Fellows, 135 compounders, and 583 Fellows who subscribe annually. The "father" of the Society appears to be Major W. C. Cooper, of Toddington Manor, Dunstable, who was elected on December 20, 1838.

A fresh volume of *Archæologia* (vol. lv., part 1) has also been issued. It contains the following papers: (1) "A Clerical Strike at Beverley Minster in the Fourteenth Century," by Mr. Arthur F. Leach; (2) "Of the Methods Used in Making and Ornamenting an Egyptian Rock Tomb," by Mr. Somers Clarke; (3) "On the Roman Town of Doclea, in Montenegro," by Messrs. J. A. R. Munro, W. C. F. Anderson, J. G. Milne, and F. Haverfield; (4) "Notes on the Cathedral Church of St. Cecily at Alby," by Mr. R. W. Twigge; (5) "The Vases of Magna Græcia," by Mr. Talfourd Ely; (6) "On the more important Breeds of Cattle which have been recognised in the British  
VOL. XXXII.

Isles in Successive Periods, and their Relation to other Archæological and Historical Discoveries," by Professor T. McKenny Hughes; (7) "The Battle of Bosworth," by Mr. James Gairdner; (8) "On two Fibulæ of Celtic Fabric from Æsica," by Mr. A. J. Evans; (9) "On a Bronze Statue of Hercules," by Mr. A. S. Murray; (10) "Further Excavations in an Anglo-Saxon Cemetery at High Down, Sussex," by the Secretary, Mr. C. H. Read; (11) "Excavations on the Site of the Roman City at Silchester, in 1895," by Messrs. W. H. St. John Hope and G. E. Fox. The volume is an excellent one, and contains fifteen plates besides other illustrations.

The party of Oxford and Cumberland archæologists who have, during the last two or three summers, been excavating on the Roman Wall have not been idle this year. Chancellor Ferguson, as usual, made the local arrangements, and obtained the local permissions, so that things were ready in advance, and the party could fall to work at once. Messrs. Pelham, Haverfield and Booker, and Dr. James Macdonald, tested the Maiden Way with the spade between Birdoswald and Bewcastle, and it responded, proving to be Roman work, but this could not be said of its supposed prolongation north of Bewcastle, which the Ordnance Survey marks as a Roman road. Nor did the Roman roads of the Ordnance Survey in the parishes of Irthington and Brampton stand the test—old roads indeed, but not made *more Romano*. The "wall of turves" was found again near Birdoswald, but it could not be found at Wall Dub on Hare Hill, where appearances excited hope that it might be. The Vallum near Birdoswald was carefully traced by its ditch, and was found to make a most extraordinary bend to the south, so as to have the camp in a sort of nook to the north. As yet this is unexplained, but search is being made to see if the like happens at Procolitia. Careful plans of all excavations are made by Mr. and Mrs. Hodgson.

Chancellor Ferguson and Mr. Hope have been spending a fortnight at the Furness Abbey Hotel in directing excavations at the abbey ruins. In the first week they removed  
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over 400 cartloads of earth, and revealed what they consider to be the abbot's house, though the local guide-books call it the infirmary, a name which Mr. Hope assigns to the great hall, etc., on the south of the site of the frater. The building now uncovered is certainly a singular one. Its principal section was a thirteenth century vaulted hall, with an upper floor or solar. The latter was rebuilt on a larger scale in the fourteenth century, by extending it eastwards on vaulting carried by the solid rock of the hillside; on the west by huge buttresses built in advance of the original wall of the ground floor. The kitchen, well, etc., are to the north, but many details remain to be yet worked out.

Dr. David Murray has printed as a separate pamphlet, entitled *An Archaeological Survey of the United Kingdom—the Preservation and Protection of our Ancient Monuments*, an address which he recently delivered before the Glasgow Archaeological Society. Dr. Murray advocates, as we understand him, and as we have done before, the establishment in England of something after the nature of the French "Commission des Monuments Historiques." It is, however, always well to know exactly what one is doing in these matters, and the very same post which brought us Dr. Murray's pamphlet also brought a letter from a French antiquary at Toul (Meurthe et Moselle). Our French correspondent, speaking of the beautiful cathedral church of Toul, and lamenting certain misfortunes which have befallen it since the suppression of the bishopric, adds: "Tenez un fait: Il existe là une magnifique chapelle hors d'œuvre à coupole, un bijou renaissance; et bien, la Commission des Monuments Historiques, sous prétexte qu'elle n'a pas de fond disponibles, va, dit on, demolir cette chapelle qui menace ruine et élever un simple mur à sa place. Cela est bien triste." The fact is, that under the specious guise of preserving a building, is too often hidden the cloven hoof of the destroyer. This is a danger against which we shall have to guard if in England we ever have a central controlling authority in these matters. In Sweden a better plan has been adopted which confers, we believe, on the Antiquary Royal the absolute right to

veto any "restoration" so-called of a church or other ancient building, or any unauthorized tampering with a prehistoric or early object of antiquity.

We referred in the July number of the *Antiquary* to the Stav-Kirke of Fortun, in Norway, and commented on the action of the American Consul in removing it as an ornament to his garden. The paragraph reached us from a source we thought we might trust, but we find that it contained some misleading statements. The American Consul in question is a Norwegian, and not an American at all, and the church was removed some years ago, and not recently. The Editor admits that he ought to have been more on his guard in the matter, as he actually saw the church near Bergen about twelve years ago, but he was under the impression that what was meant was that the removal of another stav-kirke had recently taken place. All the same, the fact remains that one of these most curious wooden churches was pulled down and taken to the neighbourhood of Bergen, where it has been re-erected and "done up" to look as much like the well-known church at Borgund as possible, but, as Mr. Harry Hems of Exeter (who writes to us on the subject) says, very little that is old remains. Mr. Hems adds: "I examined this quaint timbered church very carefully, and am of the distinct opinion that very little of the exterior (the owner did not permit one to go inside) is really old. The two doors, each cut out of a single deal plank over 3 feet wide, and some of the panelling alone appeared to lay just claim to any antiquity. Stephens's brown stain was very much in evidence everywhere, the new wood being stained down to look old, like the way in which the Wardour Street 'antique' furniture is done."

An important addition to our knowledge of the palæolithic race of Northern Europe is likely to be gained from a discovery in the caves of Dordogne. Under the stalagmites which obliterate their walls M. Rivière, who is well known as an anthropologist, has found several drawings of animals cut deep in the rock. The significance of these is that, knowing the natural habitat of such animals, we

are informed of the climate which prevailed in France when they were natural objects, and thus, by a rude approximation, we can place the prehistoric age of the race that carved them. They include the reindeer and the mammoth. Already the caves of Southern France have furnished much evidence of the same kind; but every addition to this is of value, because the fauna indicate a fairly wide range of climate, and it may at length be possible to make a guess at the duration of this early race which knew them. But Professor Boyd-Dawkins suggests its identity with the Esquimaux; presumably it moved northwards with the reindeer as the climate altered. In that case all that can be learned is how long it inhabited Central France.

We recently recorded the holding of a number of manorial courts. Perhaps the following extract from a local newspaper in the North of England may also be thought worthy of preservation in our pages, especially as the beating of the bounds in this case seems to have included some unusual features, such as the ascent of a mountain:

"The parishioners of Bassenthwaite, in Cumberland, have just gone through a most interesting ceremony, that of walking the boundaries. This was no small matter, for the walkers have to ascend Skiddaw, a task that was undertaken by young and old alike. The arrangements were made by the Parish Council and by the representatives of Sir Wilfrid Lawson, the lord of the manor. The party, to the number of seventy, started at nine o'clock in the morning, and the task took ten hours to accomplish. When Skiddaw was ascended there was, unfortunately, so much mist astir that the fine view of the surrounding country was obscured. At various parts of the route influential parishioners served out refreshments, and when the party arrived at Bassenthwaite Lake three boats were in readiness, prepared by Lady Jane Spedding and Sir Harry Vane, and these conveyed the company to the starting-point. Several men over sixty years traversed the whole journey. It is thirty-seven years since the boundaries were previously walked."

In the *Antiquary* of July last we alluded to the description of a midsummer fire lighted

at a place called Whatton, and we asked where Whatton is. Mr. R. Blair, F.S.A., kindly writes to say that the name of the village should have been given as Whalton, and that it is in Northumberland. Mr. Blair was invited by the vicar of the parish to attend the ceremony, but was unable to do so. It seems to us to be of considerable interest to find that the custom still lingers in one place, at least, in the North of England.

A useful clause of the Local Government Act (1894) provides that every County Council shall from time to time inquire into the manner in which the public books, writings, papers, and documents, under the control of the Parish Council or Parish Meeting are kept, with a view to their proper preservation, and such orders must be complied with by the parish authorities. Several counties are actively interesting themselves in this important matter. The Shropshire County Council complains that many parish councils refuse or neglect to fill up the forms of inquiry, and they have recently resolved to procure the missing information through their own officials. We have just been permitted to see the preliminary report of a Document Sub-Committee, which will shortly be presented to the County Council, of an important Midland shire. The returns from the parochial clerks are often amusing. Under the head of "documents," one of these rural officials enters as their only possessions "a ballot-screen, a ballot-box, and a stamping instrument." Among the curiosities of custody may be mentioned that one clerk thinks it sufficient to return that the documents are kept "in the usual manner," and another "after the usual fashion." Other parish officials are content to keep them "in my bureau," "in the chairman's desk," "in a drawer specially for that purpose," "in good order on my writing-table for want of a better place," and "carefully locked up in a drawer in the Vicarage study." One chairman preserves that most important of parish documents—the "Award"—"wrapped up in brown paper in a cupboard in the kitchen at my house." Another "Award" is kept in a ballot-box. What becomes of it at the time of an election is not stated! An important suburban parish states that the

documents are "kept by clerk of Parish Council in a box belonging to the said Parish Council; this box is kept locked only when the books are being used"! There are many interesting returns of overseers' accounts of the seventeenth century. It is satisfactory to note that this report proposes to insist on fifty-three parishes at once providing themselves with fire-proof safes.



In connection with the forthcoming Shrewsbury Church Congress, to be held October 5 to 9, an appeal has been issued by prominent members of the Councils of the Shropshire and Montgomeryshire Archæological Societies, inviting the loan of ancient chalices and other objects of interest to the Ecclesiastical Art Exhibition, which is usually held at the same time as the congress.



At the recent meeting of the Royal Archæological Institute at Canterbury, Mr. W. H. St. John Hope commented on the removal of earth from the crypt of the cathedral, and the lowering of the floor. Mr. Hope pointed out that the historical evidence has been falsified by the substitution round the screens and tombs of another level which never existed before, and the insertion of new plinths to mask the alteration. Mr. Hope also commented in strong terms upon the utterly needless destruction, within the last few weeks, by Sir Arthur Blomfield's orders, of the remaining portions of the rubble walls that had been built in the fourteenth century within the arches of the apse to enclose the space behind the altar of the Blessed Virgin as a vestry and treasury for its jewels and ornaments.



This very wholesome piece of plain speaking was made in the presence of the Dean and at least two of the Canons. We trust that they will profit by the condemnation which all who are interested in the preservation of Canterbury Cathedral feel bound to pass on this kind of "restoration." The matter is a pressing one as regards Canterbury, for the Dean is begging hard for funds in order to "restore" the church. If anything more than due preservation from falling into decay is meant, we hope that the public will decline to contribute to the fund. We see that the

*Athenæum* takes the same line of caution that we do in the matter, and we cannot express our own meaning better than in quoting the following words of our contemporary: "Lovers of yet 'unravished' ancient buildings are by no means willing that what remains of the relatively 'unrestored' interior of the Metropolitan cathedral shall share the fate of the exterior. Ample funds will be forthcoming for the conservation and preservation of the great church at Canterbury, but, as we hope, not a penny for more ambitious and inevitably destructive restoration."



We have spoken so strongly on former occasions in regard to Peterborough Cathedral, that it is not necessary to repeat ourselves again. We are glad, however, to learn that the Restoration Committee has decided to call in a second architect before demolishing one of the gables of the west front, which is pronounced by Mr. Pearson to be past repair. A short and very sensible article on the subject lately appeared in the *Daily Graphic*, which pertinently asked whether the mechanical knowledge of the present day is not equal to devising some system for binding the gable securely together with iron bands, in the same way as has been successfully carried out in other cases.



Mr. J. Horsfall Turner, of Idel, Bradford, is preparing a work on *Bingley, its History and Scenery*. Mr. Turner will be very grateful for any notes respecting Bingley and the old families connected with the place which readers of the *Antiquary* may be able to send him. The work is to be published at five shillings, a few large-paper copies at fifteen shillings each being also printed off.



Messrs. Jarrold and Sons, Norwich, announce for publication a work on the parish of Redenhall, with Harleston, Norfolk, by Mr. Charles Chandler. The work, which will be illustrated, will be crown octavo size, bound in cloth, and contain 200 pages. It will be published at five shillings.





## Early Mechanical Carriages.

BY RHYS JENKINS.

## No. III.—STEAM CARRIAGES.

"It will be possible to construct chariots so that without animals they may be moved with incalculable speed."—ROGER BACON.

"Soon shall thy arm, unconquered steam ! afar  
Drag the slow barge, or drive the rapid car."

ERASMUS DARWIN.

**A**LLUSION has already been made\* to the projects which David Ramsey and others were interested in, in the early part of the seventeenth century, for ploughing without horses or oxen, for boats to go without sails, and for "coaches, carts, drayes, and other things going on wheelies," which projects are considered by some authorities to relate to steam propulsion, but, as formerly stated, the evidence on this point is far from conclusive, or, rather, it is non-existent, and it would appear that for the first application of steam-power to locomotion, as is the case with many other supposed Western inventions, we have to turn to China. But in this case the invention, although made in that country, is due to a European, one Father Verbiest, a Jesuit missionary (born near Courtrai, 1623, died in China 1688).

Verbiest acquired considerable skill in the Chinese language, and under a Chinese name wrote quite a number of scientific and theological works therein. He appears to have been altogether a remarkably able man, was made Astronomer Royal at Pekin, reformed the calendar, superintended cannon foundries, and, in spite of a strong native opposition, was high in favour with the Emperor.†

Verbiest's invention was first brought into notice in this country by the English edition of Huc's *Christianity in China, etc.*, 1858, and by Muirhead's *Life of James Watt*, 1859. It is also described by Duhalde. It consisted of a light four-wheeled carriage, on which was placed an eolipile above a pan of hot coals. The jet from the eolipile was directed against the vanes of a wheel mounted

upon a vertical spindle, which at its lower end drove the axle of one pair of the road-wheels by means of a pinion and wheel. This form of motor had been described by Branca in 1629, and was, indeed, known to the ancients. In order to cause it to move in a circle the vehicle was provided with a guiding device, which appears to have consisted of an additional wheel carried by an arm which might be set at any required angle to the carriage; a device used in modern times for some of the early traction engines. In addition to the jet mentioned above, the eolipile had an orifice fitted with a reed, whereby the song of the nightingale was perfectly imitated.

This description is derived from a rare work, *Astronomia Europæa*, published in 1687.\* But it appears probable that Verbiest

\* *Astronomia Europæa*, sub imperatore Tartaro Sinico Cam Hý appellato ex umbra in lucem revocata à R. P. Ferdinando Verbiest, Flandro—Belga. E. Societate Jesu, Academia Astronomica in Regia Pekinensi Præfecto. Dilingæ, 1687.

## "CAPUT XXIV.—PNEUMATICA.

"Jam à tribus annis, dum æolopile vires examinarem curriculum bipedalis longitudinis ex levi ligno conficiendum curavi, quatuor rotis facillimè mobilem, in cujus medio vasculum vivis carbonibus plenâ, & vasculo colopilam imposui, axi priarum rotarum inserui orbem æneum dentatum, dentibus transversim extantibus, et ad horizontem parallelis, quibus apprehensis per aliam rotulam, insertam axi perpendiculari ad horizontem, axe illo circumeunte currus movebatur. Hunc autem axem inserui alteri rotæ ad horizontem parallele, cujus diameter erat unius pedis, et in convexa hujus rotæ curvatura circumcirca apposui binos asserculos, tamquam alas extantes, quas ventus, per tubulum angustum æolopile violenter expulsus, impellens celerrimo motu totam hanc rotam circumagebat, et pariter currum impellebat, qui per unam horam, et amplius (quanto scilicet tempore durabat ventus ex æolopila violenter expulsus) in motu non adeo lento poterat perseverare: ne igitur spatium à curriculo conficiendum nimis in longum excurreret, axi medio posteriorum rotarum apposui temonem, in omnem partem facile flexilem, et temonis extremo bifurcato inserui axem; ipsum denique axem inserui rotæ majoris diametri, facillimè etiam mobilem. Itaque temone ad dextram vellevam oblique inflexo, atque in illo situ per cochleam firmato, curriculum æolopilæ vento impulsus, perpetuum ferebatur in circulum, magnum vel parvum, pro atrijs sive aulæ, in qua movebatur, amplitudine, prout scilicet temo magis vel minus oblique inflectebatur. Atque hæc quidem machina est principium motûs, quem scilicet facillè communicare poteram quilibet alteri machine curruï impositæ, exempli gratiâ naviculæ papyraceæ, quæ velis suis, tamquam vento turgidis instructa, semper in gyrum circumambularet, qualem obtuli fratri majori Imperatoris, totum artis opus ipsa

\* Art. I., p. 233.

† The best account of Verbiest and his works is that given in *Bibliothèque des Ecrivains de la Compagnie de Jésus*, par P. P. Augustin et Alois de Backer. Liège, 1861.

himself had nothing to do with this particular edition, which was issued under the direction of another Jesuit priest, P. Couplet, and appears to have been based on works published in China in 1668. If this is so, it places the construction of the carriage as not later than 1665, as Verbiest writes of it as having been constructed three years before. Two of these Chinese works, *Liber Organicus Astronomia Europæa*, 1668, folio, and *Astronomia Europæa*, same date, the present writer has had the privilege of inspecting at the University Library, Leyden, and although they contain a great number of plates of instruments and machines the steam-carriage is certainly not shown, and the descriptive matter appears to relate only to the drawings. This is much to be regretted, as a drawing by Verbiest himself of his carriage would possess very great interest.

Newton suggested the application of a steam jet, but his idea was inferior to that of Verbiest, inasmuch that he proposed to derive the motion of the carriage merely from the reaction of the jet. In a modified form this scheme was brought before the Admiralty in 1730 by a Scotch inventor, who proposed to propel ships by firing guns from the stern. This invention was rejected after experiment.

The next steam-carriage is that of Papin, constructed at Cassel in 1698. Like that of Verbiest, it was on quite a small scale; it worked with great success in a room. Beyond that it had a cylinder and piston engine, nothing is known of its construction; in fact, the only reference to be found to it is contained in a letter from Papin to Leibnitz, dated July 25, 1698, in which, after referring to his steam-engine, he says:

"Pour moy, comme je crois, qu'on peut employer cette invention à bien d'autre choses qu'à lever de l'eau j'ay fait un petit modele d'un chariot qui avance par cette force: et il fait, dans mon poele, l'effect que j'en avais attendu: mais je crois que l'inegalité et les detours des grands chemins rendrons cette invention

machina occultante, et deforis audito duntaxat venti æolopilâ expulsi strepitu, instar veri scilicet venti, aut aquarum circum navim frementium. Subinde etiam per aliam tubulum æolopilæ ferruminatum venti erumpentis vim divisi, cujus tubuli extremo, in modum fistulæ preparato, philomelæ modulantis cantum perfectè referebam. Subinde etiam præludium campanularum horolgij hoc instrumento in cantilenas suas animavi: dato hoc principio motus, multa alia non injucunda excogitare, facile est."

très difficile à perfectionner pour les voitures par terre."  
— Gerland, *Leibnizens und Huygens Briefwechsel mit Papin*, p. 233. Berlin, 1881.

This was in 1698, and although Leibnitz on several occasions urged him to continue the experiments, beyond a letter dated 1704, in which he says:

"Je me flatte qu'en appliquant cette invention aux voitures par terre on pouvoit avoir de l'infanterie qui iroit plus vite que la cavalerie et qui n'auroit pourtant pas besoin de plus de fourrage que l'infanterie ordinaire,"

we hear nothing further in reference to the matter.

The carriages of Verbiest and Papin were, as already noted, on quite a small scale.

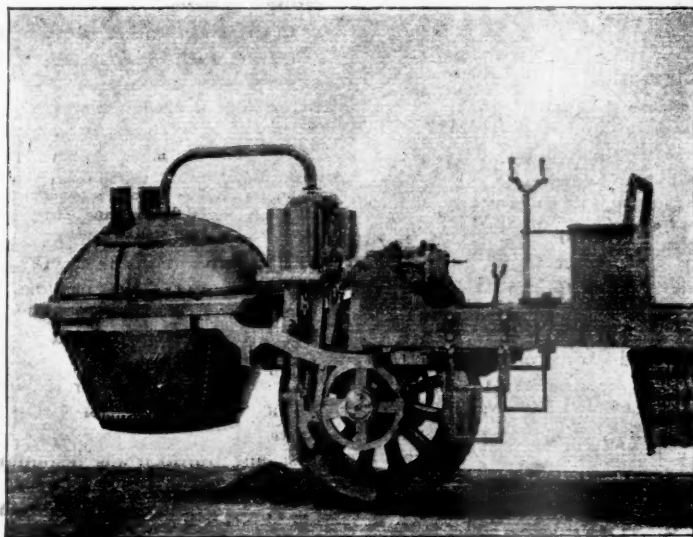
We now come to the first machine designed for actual work, that of Nicholas Cugnot, a native of Lorraine. Cugnot's second and perfected carriage is still to be seen at the Conservatoire des Arts et Métiers, in Paris. It was constructed in 1770-71, at the Royal Arsenal, by order of the Duc de Choiseul, then Minister of War, who had inspected Cugnot's first machine at work, and had been favourably impressed by it, in spite of many serious defects, the most important of which is said to have been insufficient boiler power. It could run for twelve or fifteen minutes at the rate of two miles and a quarter per hour, and then had to stop to generate a fresh supply of steam and so on. By the time the machine was completed the Duc de Choiseul was in exile, and the carriage consequently remained at the arsenal for a long time, apparently without any trial of its capabilities being made. At least such is the received opinion, but it must be allowed that M. Pouillet, then director of the Conservatoire, in discussing M. Morin's paper on the subject read before the Académie des Sciences in 1851,\* held that this particular machine had been subjected to trials, in the course of which it had knocked down a wall. M. Pouillet was also of opinion that Cugnot had made a model at Brussels before coming to Paris. M. Morin, however, from an examination of the carriage itself, considered that it could never have been under steam, and that had it knocked down a wall it would certainly have retained some marks of the encounter, which he altogether failed to discover. It is

\* Note sur la machine locomotive de Cugnot, *Compte Rendu*, vol. xxxii., p. 524.

possible that the accounts of the first and second machines got mixed one with the other. Cugnot's carriage (Fig. 1)\* is in two parts; the front, mounted upon a single wheel, is connected to the hind part, which is provided with a pair of wheels, not shown in the figure, by a pin joint, so that it may be turned in relation thereto for steering. This is effected by a handle on a vertical spindle, shown just in front of the seat of the driver, at the lower end of which is a pinion engaging with a segmental rack carried by the fore-carriage.

The boiler, engine, and the whole of the

mounted loosely upon the axle of the driving-wheel, one on each side of it, and are connected together by a transverse vibrating beam extending across the top of the carriage. Each lever carries a reversible spring pawl which actuates a corresponding ratchet wheel connected to the driving-wheel. Thus when, under the pressure of the steam, one piston descends it by means of its chain, lever, and pawl, turns the wheel through a quarter of a revolution and, simultaneously, by means of the vibrating beam, returns the piston of the other cylinder to the top thereof, so that it



STEAM CARRIAGE INVENTED BY CUGNOT.

propelling mechanism are mounted upon the fore-carriage.

The boiler, supported by projecting bars of iron, is of copper, and very much resembles the ordinary kitchen copper, with a dome fixed over it. It has an internal fire-place and two flues terminating in short chimneys. The engine has two single acting inverted cylinders, 13 inches in diameter, the piston-rods of which are coupled by chains to levers with segmental ends, which are

may, when the valve is thrown over, in its turn make a downward stroke, pushing up the other piston and advancing the wheel another quarter of a revolution. By reversing the pawls the carriage can be moved backwards. The valve is circular in section and formed with passages, so that when in one position the one cylinder is in connection with the steam pipe, and the other with the atmosphere and *vice versa*. It is operated by means of a chain and rocking levers from tappets on the piston-rods.

The workmanship and finish of this

\* From a photograph by Mr. Colman C. Starling, of the model at South Kensington.

machine is undoubtedly good, but the design strikes the engineer of to-day as very crude. For instance, there appears to be no way by which water can be got into the boiler except by removing the steam-pipe; the fire could not be attended to while the carriage was in motion, at any rate not while in motion forwards; and as apparently no means are provided for starting or stopping, it would be necessary to allow the carriage to run until it could go no further, then to fire up, taking care to clear out of the way before the steam attained sufficient power to restart the vehicle. There is, however, a sort of brake, adapted to be worked by the feet of the driver, which might have been intended to facilitate matters. Altogether, even if it had been tried, this machine could have given but very poor results in practice. Nevertheless, it is a most interesting machine, and that it has been so effectually preserved must be a matter of great satisfaction to all interested in the subject. At the same time as Cugnot another French inventor, Planta, was considering the problem, but after having had his attention directed to what Cugnot was doing he retired from the field, considering the scheme of the latter to be better than his own.

In the second article of this series reference was made, in connection with the use of an auxiliary sail, to the carriage of Stemon, of Avallon in Burgundy. This was made in 1776, and in view of the attention that the steam-engine was then beginning to attract, may well have been propelled by that motor. It was described as simple and light, and worked without the aid of weights, springs, or gearing.

We see, then, that the idea of applying the steam-engine to the propulsion of road carriages is almost contemporaneous with the birth itself of that motor, as we now understand it, and, indeed, the idea is one that would readily occur to any one considering the matter. Later on Watt himself tells us\* that when his attention was first directed to the subject of the steam-engine in 1759 by Dr. Robison, then a student in the University of Glasgow, that gentleman had specially mentioned such application.

\* In a note in Dr. Robison's *Mechanical Philosophy*.

Watt appears to have considered the question on several occasions later on in life. In 1768-69 in his correspondence with Dr. Small, there are references to the steam carriage projects of R. L. Edgeworth, and of a London linen-draper named Moore.

As to the latter Watt writes:

"If linendraper Moore does not use my engine to drive his chaises, he can't drive them by steam. If he does I will stop him. I suppose by the rapidity of his progress and puffing, he is too volatile to be dangerous."

Again, in 1773, Small writes that

"Mr. Edgeworth has returned to England and is engaged very earnestly in endeavouring to move wheel-carriages by steam."

In the specification of his patent of 1784 Watt included a description of a steam carriage with reference to which he writes to his partner Boulton:

"I have now got the specification composed, but the drawings are not nearly finished. I have given such description of engines for wheel-carriages as I could do in the time and space I could allow myself; but it is very defective, and can only serve to keep other people from similar patents."

This letter gives the key to Watt's position in the matter. He had no faith in the feasibility of steam locomotion on common roads, but in spite of that wished to retain the field all to himself.

It is not quite clear why he took this particular moment for making the steam carriage the subject of a patent; probably his assistant Murdoch was beginning to work in that direction.

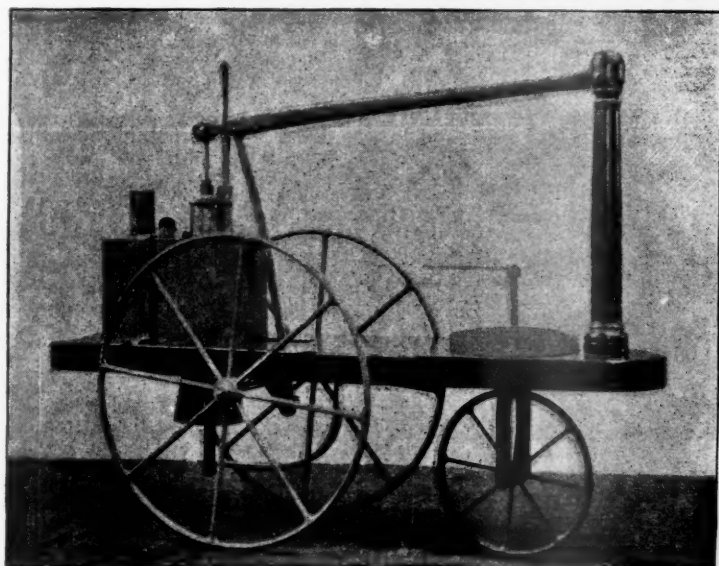
As may be gathered from the letter just quoted, Watt's specification in so far as it relates to the steam carriage is very crude. The boiler is to be of *wood*, or of thin metal surrounded by strengthening hoops, and preferably of cylindrical or globular form, with the furnace inside and surrounded by water. The engine may be double acting, and either noncondensing or provided with an air-cooled surface condenser, an arrangement, by the way, to be found in many modern steam tramcars. Gearing might be adopted for giving two speeds, also an arrangement adopted in modern practice.

In other letters to Boulton in the same year he elaborates his ideas to some extent, goes into minute calculations as to the size of engine required, states that the engine may



be a beam-engine, or a direct-acting vertical, and that it should be placed behind the boiler, to act upon the hind wheels; mentions copper as the material for the boiler, points out the advantage of coke as fuel, and thinks "the shaking of the carriage will supersede the necessity of poking the fire." He states also that his first idea was to use an inverted cylinder engine, driving the axle by means of a rack and pinion, and that a rotary engine might be used, but doubts the practicability of that type of motor. In

any detailed description would be superfluous. It consists of a three-wheeled carriage; a rectangular copper boiler traversed by an inclined flue and heated by a spirit-lamp; a cylinder three-quarters of an inch in diameter mounted in the boiler; a rocking beam coupled to the piston-rod of the cylinder and to the crank-axle upon which the hind wheels of the carriage are mounted, one of them being loose to allow the carriage to turn. The front wheel may be swivelled for steering. The valve by which steam is admitted



STEAM ARRIAGE INVENTED BY MURDOCH.

the same letter is a reference deprecating Murdoch's desire to experiment in this line.

Murdoch, however (he was at that time acting for Boulton and Watt in Cornwall), made a small model in that year, 1784, which is now in the Birmingham Museum and still in working order. There seems to be no doubt that this was the first locomotive engine made in this country; it is so beautifully simple in construction, and is so clearly shown in the illustration,\* that

\* From a photograph by Mr. Colman C. Starling, of the duplicate at the South Kensington Museum.

and released from the cylinder is moved up and down by means of the rocking beam and a tappet rod; it is of the type now known as the "piston valve." The application of the crank for converting the reciprocating motion of a steam-engine piston into rotary motion had been patented by Pickard in 1780; this is the first instance of its use in connection with locomotion.

The story of a trial of Murdoch's carriage as given by Mr. Buckle\* is worth repeating here:

\* Proceedings of the Institution of Mechanical Engineers, 1850.

"At the time Mr. Murdoch was making his experiments with his locomotive engine he greatly alarmed the clergyman of the parish of Redruth. One night, after returning from his duties at the mine, he wished to put to the test the power of his engine, and as railroads were then unknown, he had recourse to the walk leading to the church, situate about a mile from the town. This was rather narrow, but kept rolled like a garden walk, and bounded on each side by high hedges. The night was dark, and he alone sallied out with his engine, lighted the fire or lamp under the boiler, and off started the locomotive with the inventor in full chase after it. Shortly after he heard distant despair-like shouting; it was too dark to perceive objects, but he soon found that the cries for assistance proceeded from the worthy pastor, who, going into the town on business, was met in the lonely road by the fiery monster, whom he subsequently declared he took to be the evil one *in propria persona*."

Murdoch was persuaded to allow the matter to drop at that time, but two years later—possibly through hearing of the attempts of Symington and others—he again took it in hand. In this connection some letters published for the first time by Mr. R. B. Prosser in his account of Murdoch in the *Dictionary of National Biography* are of great interest. First we have a letter to Boulton and Watt from Thomas Wilson, their agent in Cornwall, dated August 9, 1786:

"Wm. Murdoch desires me to inform you that he has made a small engine of  $\frac{3}{4}$  dia. and  $1\frac{1}{2}$ -inch stroke, that he has apply'd to a small carriage, which answers amazingly."

This is probably the same engine as that shown above, although, indeed, the stroke differs, possibly through an error on the part of the writer. It may very well have been that the engine was left in an incomplete or imperfect state after the first trial, so graphically alluded to by the parson of Redruth, and that it now received the finishing touches. Murdoch was so well satisfied with its performance that he started for London in order to secure a patent; but we will allow the letters to speak for themselves. Writing to Watt from Truro on September 2, 1786, Boulton stated that near Exeter he had met a coach in which was William Murdoch:

"He got out, and we had a parley for some time. He said he was going to London to get men; but I soon found he was going there with his steam-carriage to show it, and take out a patent, he having been told by Mr. Wm. Wilkinson what Sadler had said, and he has likewise read in the newspaper Symington's puff, which has rekindled all Wm.'s fire and impatience to make steam-carriages. However, I prevailed upon him to return to Cornwall by the next day's diligence,

and he accordingly arrived here this day at noon, since which he hath unpacked his carriage and made travel a mile or two in Rivers's great room, making it carry the fireshovel, poker and tongs. I think it fortunate that I met him, as I am persuaded I can either cure him of the disorder or turn the evil to good. At least I shall prevent a mischief that would have been the consequence of his journey to London."

On the 8th of the same month Boulton again writes to Watt:

"Murdoch seems in good spirits and good-humour, and has neither thought upon nor done anything about the wheel-carriage since his return, because he hath so much to do about the mines."

On the 17th he writes:

"Send all the engines as soon as possible, and he will be better employed than about wheel-carriages. He hath made a very pretty working model, which keeps him in good humour, and that is a matter of great consequence to us. He says he has contrived, or rather is contriving, to save the power arising from the descent of the carriage when going down hill, and applying that power to assist it in its ascent up hill, and thus balance ye acct. up and down. How he means to accomplish it I know not. . . . Wm. uses no separate valves, but uses ye valve piston, something like the 12-inch little engine at Soho, but not quite."

Mr. Prosser considers that the Birmingham model would be quite incapable of carrying a set of fireirons, and that there must have been a larger one made, as well as a full size carriage. Against this we have to set the improbability of a busy man, such as Murdoch was, finding leisure for the construction of two separate models at the same time, to say nothing of the fact that it would be very strange for such a model to disappear altogether. The last remark also applies in reference to the full-size carriage; it is likely that Murdoch ordered some of the parts for this, but never got so far as to put them together. His employers found him so much to do about the mines, that he dropped his locomotive projects altogether for the time being. Later on in life it is recorded that he, in conjunction with David Gordon, also a steam-carriage projector, carried out some experiments in the application of compressed air as a motive power for vehicles. But this scheme also was allowed to fall through.

Before leaving Watt and Murdoch, it may be well to quote some of Watt's letters of about the same date as those of Boulton given above. Writing to Boulton on September 12, 1786, Watt says:

"I am extremely sorry that W. M. still busies himself with the steam-carriage. In one of my specifica-

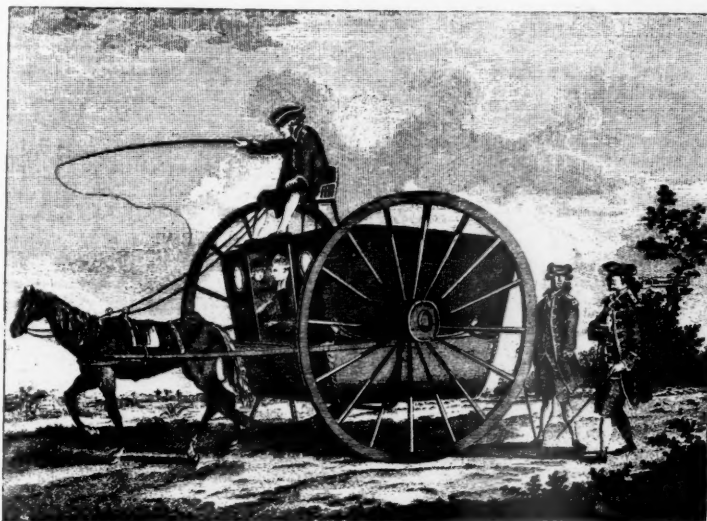
tions I have secured it as well as words could do it, according to my ideas of it: and if to that you add Symington's and Sadler's patents, it can scarcely be patentable. . . . I have one of some size under hand, and am resolved to try if God will work a miracle in favour of these carriages. . . . In the meantime I wish W. could be brought to do as we do, to mind the business in hand and let such as Symington and Sadler throw away their time and money-hunting shadows."

A few months later, October 5, he writes to Dr. Black:

" . . . You know I have long had plans of moving wheel-carriages by steam, and I have described them in one of my patents some years ago. I believe I shall make some experiments on them soon, but have small hopes of their ever becoming useful."

well authenticated that prior to embarking upon the project of steam navigation, with the origin of which his name will always be associated, Symington had constructed and worked a model steam-carriage; this will be described and illustrated in a succeeding article.

R. L. Edgeworth, father of the celebrated Maria Edgeworth, was a most ardent advocate of the application of steam power to locomotion, but it does not appear that he ever attempted to construct a motor carriage. Another steam-carriage enthusiast was Erasmus Darwin, the grandfather of Charles



MOORE'S CARRIAGE FOR TRAVELLING "WITHOUT HORSES."

But even if he did begin one, Watt certainly never completed a steam-carriage, and although one cannot help regretting that he and his partner placed many obstacles in the path of Murdoch, perhaps it was as well in the end that the latter did not spend too much time and energy over the matter, for a practical success was entirely out of the question upon the roads of those days.

In the quotations from the correspondence of James Watt given above, reference is made to the steam-carriage projects of Moore, Edgeworth, Sadler, and Symington. It is

Darwin, who was in practice as a physician at Lichfield. In a letter to Boulton in 1765, he goes into what he considers the desiderata of the "fiery chariot," and outlines a scheme of construction, but this is very crude and may be omitted here. Lines from his poem, *The Botanic Garden*, are quoted at the head of this article.

Sadler was the patentee of a form of rotary engine, and may have had in view its application to locomotive purposes, but there are no particulars available as to his project.

The same remark applies to Moore, who

in 1769 obtained two patents for motor carriages; the first was to be "put in motion by fire, water, or air, with a small assistance of horses or manual labour"; the second was "constructed upon peculiar principles, capable of being wrought or put in motion by force or power without being drawn by horses or any other beast"; but as in neither case was a specification enrolled, we have no means of ascertaining what he considered to have been his invention. There is no evidence whatever that he constructed a steam-carriage, although some references in the public journals of that period have been read, and very reasonably, too, as referring to such carriages. Thus, in *The Leeds Mercury* of April 11, 1769, the following paragraph appears:

"A correspondent writes that Mr. Moore's new invented machine to go without horses, for which he has obtained his Majesty's patent, is not only adapted to wheel-carriages in general, such as coaches, chaises, carts, waggons, etc., but to ploughing, harrowing, and every other branch of husbandry, also to all other machines and engines now in use throughout the kingdom, in various branches of manufacture wherein draught horses are now employed. We hear that the ingenious inventor has sold all his own horses, and by his advice many of his friends have done the same, because the price of that noble and useful animal will be so affected by his new invention, that their value will not be one-fourth of what it is at present."

*The Gentleman's Magazine* for the same year tells us that

"Mr. Moore, the ingenious contriver of the carriage to travel without horses, waited upon his Majesty, at Richmond, with one of them, who was graciously pleased to express his approbation of it."

The same journal, in its obituary notice of Moore, in 1787, refers to

"The self-moving machine which he made, and which grew to such a magnitude . . . as to attract the notice of the Legislature."

As a matter of fact, Moore devoted much time and money to the improvement of carriages to be drawn by horses, and these references, in spite of the terms "self-moving," "to travel without horses," etc., refer only to horse-drawn vehicles. This is borne out by an article in *The Scots Magazine* for 1771, which speaks of "the coach Mr. Moore had invented to be drawn by one horse, having been a subject of general consideration."

But more conclusive evidence that Moore's carriage was not one in which horses were

entirely dispensed with is afforded by the illustration, which is copied from a print dated 1771, and entitled *Mr. Moore's New Invented Machine for Travelling without Horses*. This shows very clearly a coach mounted upon a single pair of very high wheels, which peculiarity appears to constitute the invention, drawn by one horse, and the term "without horses" is to be understood as meaning that one horse only is required to do the work of two or more.



## The Jesus Steeple of Old St. Paul's.

By the EDITOR.



HERE is preserved at the Record Office, among the ecclesiastical inventories of the first year of Edward VI., the following brief "declaracion" or "vyew" of the Jesus Steeple in St. Paul's Churchyard, which, strange as it may seem, has never yet been printed. I came across it two or three years ago, and made a note of it; but supposing that it must be well known, and had possibly been printed more than once, I took little further notice of it. Failing, however, to find any reference to it in print, I recently consulted Dr. Sparrow Simpson, and he very kindly tells me that it is unknown to him, and that he believes it has never been printed. Dugdale, *History of St. Paul's* (edit. 1818), p. 87, says that Sir Miles Partridge, knight, won the Jesus bells of King Henry VIII. at one cast of the dice, and pulled them down, for which statement he refers to Stow's *Survey*. Stow (edit. 1598, edited by Thoms, 1842) appears to say that Sir Miles Partridge pulled down the steeple also. Although its site is well indicated in a document printed in the Ninth Report of the *Historical Manuscripts Commission*, p. 58, it may, nevertheless, be convenient to add a little of what Stow tells us about the steeple. He says:

"Near unto this school [St. Paul's School, at the east end of the cathedral], on the north side thereof, was of old time a great and



high clochier, or bell-house, four square, built of stone, and in the same a most strong frame of timber, with four bells, the greatest that I have heard; these were called Jesus' bells, and belonged to Jesus' chapel [under the choir of old St. Paul's], but I know not by whose gift: the same had a great spire of timber covered with lead, with the image of St. Paul on the top, but was pulled down by Sir Miles Partridge, knight, in the reign of Henry VIII. The common speech then was, that he did set a hundred pounds upon a cast at dice against it, and so won the said clochiard and bells of the King; and then causing the bells to be broken as they hung, the rest was pulled down."

It is, perhaps, satisfactory to read what follows: "This man was afterwards executed on Tower Hill for matters concerning the Duke of Somerset, the 5th of Edward VI."

The "brief declaration or view" of the steeple is as follows:

*P.R.O. Land Revenue. Church Goods. 441.*

The Steple adjoynynge vpon Paules churchyard wythin the Cytie of London Comenly callyd Jesus steple

A Bryeffe Declaracōn or vyew takyn by estimacōn aswell of the Scyte Cyrcuyt and compas of the sayed steple and Imballementes of Tymberwerke coveryd with leade as also of the fframe and Belles ther with Butters\* & pyepes of Leade apperteynyng and belongynge to the same

That ys to saye

The Scyte of the sayed steple & fframe being quadraunte. Conteynyth by estymacōn in breadyth xx<sup>ti</sup> yardes & in length xx<sup>ti</sup> yardes and here putt in valew [because the sayed steple & fframe ys ther yet standynge]<sup>†</sup> by the yere

xxvj<sup>s</sup> viij<sup>d</sup>

The Leade vpon and abowt the sayed steple Conteynyth by estimacōn xlvj foudders<sup>‡</sup> at iiij<sup>th</sup> le ffounder

clxxxiiij<sup>th</sup> res. ut<sup>r</sup> Regi§

Belles ther. That ys to say iiij conteynyng by estymacōn xvij<sup>m</sup> at xx<sup>s</sup> le hundreth

clxx<sup>th</sup> res ut<sup>r</sup> Regi§

\* Buttress.

† The words within the square brackets are erased.

‡ Fother = 19 cwt.

§ *I.e.*, residuum uitur Regi.

The tymberwerk and fframe there valued & worth by estymacōn xxx<sup>li</sup> over and besydes all such charges as may arryse for the takynge downe of the same

xxx<sup>li</sup>

Memorandum that the sayed chargys wyll arryse unto the somme of twentye markes sterling

Summa totalis cccclxxxiiij<sup>li</sup>

per me Thomam Spylman

Stow, it will be observed, states that the steeple was pulled down in the reign of Henry VIII. This is not inconsistent with the document above cited, the words in which, "because the sayed steple & fframe ys ther yet standynge," having been erased after it was drawn up, and apparently before it was delivered into the Exchequer in the first year of Edward VI. The bells, however, appear to have been still in the steeple at the time the paper was drawn up.



## From London to Edinburgh in 1795.

BY THE REV. WILLIAM MACRITCHIE.

WITH NOTES BY DAVID MACRITCHIE, F.S.A. SCOT.

(Continued from p. 275, vol. xxxii.)

[Monday, 10th August.] Dine at the Angel inn, Barkway.\* Betwixt that and Cambridge (an open, dry, chalky country; much fallowing for wheat; they sow the Red kind generally here;) observe at times from the top of my vehicle some rare plants by the way-side, such as the *Campanula glomerata*, *C. patula*, *Asperula cynanchica*, &c., &c.

Arrive at Cambridge at five P.M. After drinking coffee, take a walk through the courts of several of the colleges.

Tuesday, 11th August. Cambridge. No coach sets out for the North till to-morrow. After breakfast, make a botanical excursion to the Gogmagog Hills, about four miles south from Cambridge. Find there a good number of rare plants, such as *Athamanta libanotis*, *Asperula cynanchica*, *Campanula glomerata*, *Caulus daucoides*, *Carduus*

\* About thirty-four miles from London.

*acaulis*, *Carlina vulgaris*, *Ouonis spinosa*, *Centaurea calcikapa*, *Gentiana autumnalis*, *Hydesarum onobrychis*, *Linum perenne*, *Melampyrum pratense*, *Cucubalus olites*, &c., &c., but do not find *Ophrys* —. The country here all chalk, with flinty nodules imbedded in it.

Return in the afternoon to visit the University. The King's Chapel in King's College, founded by Henry VI., forwarded by Henry VII., and finished by Henry VIII., one of the most complete things of the kind in the world, and the admiration of all who have seen it. The Painting above the Altar is a striking representation of the taking down of our Saviour's body from the Cross. The paintings on the windows are admirable: the fretting of the roof beyond expression beautiful: the organs a masterpiece. The floor of the finest marble: the roof seemingly supported upon nothing. Eleven places on each side, without terminate each in a high top or spire, besides the towers and spires at each corner of the building, forming in all twenty-six spires, give the external side of the building a very singular and striking appearance. The emblematical carved figures within allude to the Roses, to the Houses of York and Lancaster.

After seeing King's College go next to Trinity College. The Chapel here also magnificent. The Altar-piece represents the Angel Michael treading Satan under his feet, and going to bind him in chains. The attitude of Michael is inexpressibly dignified. But the most remarkable object here is the Statue of Sir Isaac Newton, supposed to be exceedingly like him. It is of the finest wrought marble exalted upon a high pedestal. He holds a prism in his hand, and stands in graceful but thoughtful attitude, as if studying the refraction of the rays of light from a cloud during the time of the rainbow. His observatory is a stately tower. Next visit St. John's College, &c., &c., till dark. The river Cam waters this place.

*Wednesday, 12th August. Cambridge.* At five A.M. (an excessive degree of heat) take leave with regret of this venerable Seat of literature, bid adieu to these "antique spires that crown the watery glade." Set forward aboard the coach to Huntingdon to breakfast. Hay-harvest not done. Some rye cut

down. Vast fields of beans. Beautiful willows. See near Huntingdon the *Sagittaria sagittifolia*. From Huntingdon proceed to Stilton. Near Stilton have a view of Wittlesea-meer, famous for tench. From thence to Stamford, where dine in a great company of travellers from different parts of England. A character; a lady from Ireland. Stop here to see Burleigh, the Earl of Exeter's. Set out after dinner for Burleigh. This justly esteemed one of the first Seats in England. The trees of the park are venerable for their age and size, and disposed in the most beautiful and tasty manner. The place extensive and magnificent. A noble canal, with a bridge over it, winds through the Park, containing a variety of fish. The lawn covered with Spanish sheep, differing essentially from ours both in shape and colour. Very prolific, and very good mutton; of various colours; long white tails, the bodies speckled, black and blue; horns somewhat resembling those of goats. The ewes have frequently two lambs at a birth.

Burleigh (built in 1585 by the then Earl of that name) more resembles a Royal palace than an Earl's chateau. A hollow square, containing a large narrow court, enclosed with turreted buildings; the rooms not remarkably large, but adorned with paintings the finest of any in England, some of them the finest in Europe. Works of the greatest Italian masters here; endless variety. Those that catch the attention of Connoisseurs most are Dominicino's Mistress by himself; three paintings on a glass window; the Holy Family by Carlo Dolci, for which the Earl of Exeter paid one thousand five hundred pounds Sterling; but above all, Christ Blessing the Bread, by the same hand, for which the present Earl has been offered six thousand pounds, but will not part with it for any money; it is perhaps one of the first Paintings in the world.

Return in the evening to Stamford. The weather still continues intolerably hot. The climate of the south of England is very sensibly hotter than that of Perthshire. I have been in a constant state of perspiration for upwards of three weeks.

*Thursday, 13th August. Stamford.* Get up early in expectation of a place in the Mail coach at seven o'clock. Two Mails

arrive, but the places all occupied. Obligated to wait here till ten A.M. Heavy coach arrives at ten; have a berth on board. Set out from Stamford (finely situated on the north bank of the river Welland); easy ascent of several miles to Wytham-common. A great deal of the hay-harvest not over here. Fine high, open, healthy country. Good deal of pasture-ground; the farms here not remarkably well cultivated. Arrive at Grantham to dinner. One lady and eleven gentlemen, dine all together; hearty entertainment. Two English clergymen; a Swiss gentleman. Set out all in company; six on board, and six in the hold.\* From a rising-ground to the north of Grantham have a most extensive and rich prospect, towards Lincoln Abbey. See here a great part of the boundless plains of Nottinghamshire, Lincolnshire, &c. At Newark pass the river Trent. Observe the *Sagittaria sagittifolia*, and in one place the *Jasione*, which I had not seen a plant of for several hundreds of miles; but these stage-coaches are a bad business for botanists. Travel through an opulent corn-country waving ripe for harvest. Extensive farms well cultivated; though in many places grass "bauks"† and crooked ridges, which a Scotch farmer would laugh at. Few oats; many beans; much wheat and barley. Come to Tuxford.‡ Here part with our lady and her husband, a clergyman and his wife of this place. Night comes upon us as we approach to the boundary of Yorkshire. Few houses by the way-side: these large farms depopulate the country. A good deal of lightning; no rain however. Calm, warm evening, with high clouds, the stars dimly twinkling through the gloom. At Bawtry enter Yorkshire. Pass over a desert common. Dark: converse about robbers: no guard attends us: all of us unarmed. Arrive at Doncaster at eleven P.M., thank God, without any untoward accident having befallen us. Sup, ten gentle-

men together. At threequarters past eleven, the coach sets forward with my fellow-travellers, whom I recommend to the protection of Heaven, and rest here all night in a good comfortable inn.

*Friday, 14th August. Doncaster.* Slept soundly for eight hours at the Angel Inn, one of the best inns in England. Rise and dress before breakfast. After breakfast, walk out through the town, view the market-place, and admire the neatness and cleanliness of the streets, houses, &c. Doncaster supposed by travellers to be among the neatest towns in England. The public buildings in general have their date marked on their front, together with the name of the reigning magistrate at the time of their erection. Walk into the church-yard. The Church a stately gothic building having a magnificent square tower with sixteen points a-top. The doors being open, and the church now a-repairing, have a view of its inside. Fine set of organs. No paintings on the windows. On the left hand of the altar-piece is inscribed the Lord's Prayer in large golden letters; on the right hand the Creed in the same; and in the middle betwixt them the Ten Commandments in the same characters, a rising sun above with I.H.S. in its centre. In the adjoining aisles are several pretty marble monuments with good Latin inscriptions. The church is well paved, well seated, simple and unornamented, but kept clean, swept and garnished. Fine music bells here. How different in general, and how exceedingly superior are the English churches to our poor Scotch kirks!

Take a walk across the bridge and along the banks of the river. The Dun or Don, from which the town has its name, is the same stream that runs by Sheffield. It has a little pleasant fall here, about one hundred yards above the bridge. A waterfall is a rare object indeed in most parts of the east and south counties of England. Below the bridge on the north bank of the river observe the *Sysimbrium silvestre*.—Good market for corn here, beans, oats, rye, barley, wheat. The price of wheat fallen here twelve shillings a quarter within these three days; at present thirty-six shillings the three bushels.

Send up my luggage to the Rein-Deer Inn at two P.M. to wait the Sheffield coach. Dine

\* It would be interesting to know whether this nautical way of referring to stage-coach travelling, of which the above is not the first instance, was a peculiarity of the diarist's, or whether it was a common usage at that time. In the latter event, the similar custom in the United States at the present day ought probably to be regarded as a survival from the eighteenth century.

† Strips of uncultivated ground between the furrows.

‡ Twelve miles beyond Newark.

there with three gentlemen of the neighbourhood. Informed by one of them that there had been a dreadful storm through the night, thunder, lightning, and rain. Set out from Doncaster at four P.M. Fine prospect of a fine country all the way to Sheffield. First, a little to the northwest of Doncaster, *Cusworth* (Rightson,\* Esq.): Second, *Sprotsbro'* (Earl Kinnoul): Third, *Cumshoro'*, a curious old Castle of an hexagonal form, situated on a woody eminence on the south bank of the river Don.† Much limestone burnt here, and carried up to Sheffield, &c. Fourth, Squire Finch's Castle.‡ From a rising-ground here have a view of Fifth, *Wentworth*, the Seat of Earl Fitzwilliam, opposite on the north bank of the river. The grounds here on each side finely diversified into hill and valley. Sixth, *Aldric Hall*:§ Seventh, Jo. Walker's, Esq., beautifully situated on a height on the south bank of the Don, near Rother[h]am. Stop at Rotheram and refresh. After passing Rotheram about a mile, look back on the town with its church and spire, forming a fine object in the landscape. The rain falls heavy upon us. Go inside and arrive at Sheffield half-past seven P.M. Go in to the Tontine, and get Captain Stewart's account of the Riots. Order up my things to Sharrow, and arrive in the evening at the hospitable mansion of my friend.||

*Saturday, 15th August. Sharrow.* Go down to Sheffield with Mr Mackenzie, and view Mr Alsop's Iron-works; particularly his method of making anvils. Afterwards go to the Coffee-house, and visit Captains Stewart, Mr Donald, and Mr Killigan. See the billiard-room. Take a walk through the market-place, &c.; and return to Sharrow to dinner. Company at dinner, Colonel

Cameron of the Sheffield Regiment, Captains Stewart and McDonald, Mes<sup>rs</sup> Preston and Shaldwick. Walk down in the evening again to town. Introduced to Mr Grieve at his house. Play at backgammon. Sup, and return to Sharrow.

*Sunday, 16th August. Sharrow.* Go to St. Paul's Church, the church of my friend. Mr Goodwin, a young man, reads prayers in the forenoon, and my friend preaches. The same in the afternoon. Dine at the good old lady M<sup>rs</sup> Smith's, my friend's mother-in-law. Drink tea at Mr Preston's. After tea, attend evening service in the Town Church, where Mr Preston preaches a sermon on Death. Sup at his house, and return late to Sharrow.

*Monday, 17th August. Sheffield.* Went with Mr Mackenzie to the Button-manufacture carried on to a great extent here by Mr — and C<sup>o</sup>. The different processes shown us, and described to us with great precision and clearness by one of the Company. After seeing this very ingenious manufacture, walk to the Tontine tavern, and dine there with the Mess; Colonel Cameron, Captains Stewart, McDonald, McKilligan, Lieutenant Radcliffe, Agnew, &c.

In the afternoon, Mr Downs, chaplain to the Sheffield volunteers, conducts me to see the Plating-works. The slitting of the steel, &c., all performed by wonderful mechanism indeed, the machines driven by the power of steam. In the evening go to the Parade. After Parade, receive their commissions for the North.\* Mr Mackenzie and I go to supper to Mr Preston's. An agreeable party; music, vocal and instrumental. After supper, return to Sharrow.

*Tuesday, 18th August.* Breakfast at Sharrow with my worthy friend and his amiable young family. Bless them, and part with them. Mr Mackenzie himself accompanies me to Sheffield. Go in to a cutler's shop and purchase razors, knives, &c. Afterwards go to see the manufacture of iron fenders and grates. This also a rare work. Go next to purchase some scissors for little

\* In Paterson's *British Itinerary* (1785) the name is "Wrightson, Esq." Evidently a mistake of a letter has been made in each case, and the name ought to be "Wrightson."

† This is evidently the "Conisbrough" of Paterson's *Itinerary*, and the "Coningsburgh" of *Ivanhoe*. (In the descriptive account appended to the novel, *Note L*, Scott quotes from Gough's edition of Camden's *Britannia*, 2nd Edit., vol. iii., p. 267.)

‡ "On right, Savile Finch, Esq." (Paterson's *Itinerary*.)

§ "Aldwark. Foljamb, Esq." (Paterson's *Itinerary*.)

|| The Rev. Mr. Mackenzie, with whom the diarist had spent several days (July 13 to July 20) during his southward journey.

\* In these days of cheap postage and parcel post one is apt to forget that, even long after the date of this diary, friends were accustomed to oblige each other as far as possible by carrying letters and messages to distant relatives.



presents. Sheffield the first town for cutlery-work perhaps in the world. Adieu to Sheffield. It is a dirty, monotonous town, but surrounded with one of the finest countries in England: romantic dales, sweetly-rising hills, plantations, enclosures, and neat gentlemen's seats on every side.

Mr Mackenzie conveys [? convoys] me as far as the third mile-stone nearly from Sheffield;\* and there introduces me to the house of Booth, Esq<sup>r</sup>, of Brush-house. Mr. Booth a very ingenious man. His place well laid out and finely situated. His hedges, stone-fences, and plantations all a model. His neighbours are obliged to him for his good example of improvement. Mr Booth also a very capital mechanic and mathematician. Shews us a very fine camera-clara, and a most ingenious equatorial made by Ramsden. Explains its construction and powers most concisely and distinctly. Entertains us with a forenoon-luncheon. Here we part with him. And here I part with my worthy and generous friend Mr Mackenzie; whose hospitality and friendly offices have contributed much to the pleasure I derive from this long and wide excursion. May Heaven befriend him at all times! Arrive at the Bank-top inn about one o'clock P.M. Stop here to refresh myself and horse, as well as to contemplate for a little the charming view seen from the top of this hill, commanding a widely-extended horizon all round, a rich well-cultivated country, interspersed with "hill and dale, and wood and lawn and spire, and glittering towns and gilded streams." Wentworth Castle, the seat of the Earl of Stafford, lies about a mile and a half south-west of this curious eminence, and the place and the park about it make a fine appearance here. On this hill his Lordship has erected a long line of artificial ruins, somewhat resembling an old fortified wall with turrets, which must produce a very noble effect seen from Wentworth Castle.

Set out after dinner, and pass through Barnsly, a considerable town. From Barnsly proceed to Wakefield, and stop in

\* Although the diarist does not definitely say so, he was once more astride of the horse which had brought him south from Perthshire, and which he had left at Sharrow on July 20, continuing his journey to London by coach.

the afternoon. As you enter to Wakefield from the south, a beautiful sight [? seat] presents itself on your right hand on a high wooded elevation. This is Heath, the supposed "Choice" of Pomfret the poet.\* The river Kelder passes by Wakefield, and a canal goes from hence to Halifax, carrying coals, corn, &c.

Wakefield, an elegant well-situated town, with a fine Spire, and some beautiful streets. A new town is begun to be erected on the north side of the old, and a new church on an [?] exclusive site. The country here-about most delightful; and the harvest just approaching. Wheat has fallen here within these few days from three guineas the three bushels to twenty-seven shillings. After leaving Wakefield, proceed through a fine rich coal country to the banks of the Air[e], a fine river, bringing up considerable small craft, with corn, &c., and carrying down vast quantities of broad-cloth, &c., from Leeds. Arrive at Leeds in the dusk.

Wednesday, 19th August. Leeds. This a very large populous town, finely situated on the north bank of the river Air. It is remarkable for the broad-cloth manufacture, and is in this respect among the first towns in England. The ground rises by an easy ascent for several miles as you go north from Leeds. About two miles to the north of the town stands Gladder, an elegant seat of Dickson, Esq<sup>r</sup>.† About seven miles to the north of Leeds come to Harwood, a cleanly little village, and in its immediate vicinity on your left hand Harwood-house (Lord Harwood, formerly Lascelles),‡ a most beau-

\* Near some fair town I'd have a private seat,  
Built uniform, not little, nor too great;  
Better, if on a rising-ground it stood;  
On this side fields, on that a neighbouring wood.  
(From "The Choice," by John Pomfret.)

† "Allerton Gledhow Dixon, Esq." (Paterson's *British Itinerary*.)

‡ In Paterson's *Itinerary*, published ten years before the date of the Diary, the entry is, "Harewood house, Edwin Lascelles, Esq." This Mr. Lascelles was raised to the peerage in 1790, as "Lord Harewood, of Harewood Castle, co. York." He died without issue on January 25, 1795, when the barony expired; but his heir-at-law, Edward Lascelles, Esq. (great-grandfather of the present Earl of Harewood), was made "Baron Harewood, of Harewood, co. York," on June 18, 1796 (*Burke*). There was thus no existing Lord Harewood when the Diarist passed Harewood House on August 19, 1795.

tiful Seat on a finely-rising bank, laid out in elegant taste; and below the house a large piece of water, forming one of the finest ponds anywhere to be seen. The grounds rise charmingly to the south and north of this basin, and are richly decked with venerable trees and well-disposed plantations.

After leaving Harwood, come down to the bank of the river Wharf[e], a delightful stream here. Pass the Wharf, and breakfast at the Ship Inn at the north end of the bridge.\* Leave the bank of the Wharf, and pass along a delightful well-cultivated tract of country in company with two travelling gentlemen; one of them of Leeds, well acquainted with the country, and very intelligent and communicative. Beautifully-rising grounds on each side of the Wharf. Arrive at Knaresborough Forest, some time ago begun to be cultivated and enclosed by the direction of the Earl of Bute. The grounds here hilly, heathy and poor. Arrive at

#### HARROWGATE.

High Harrowgate contains three capital inns, with very large rooms, and numerous accommodations for strangers. The Dragon Inn, the Granby, the Queen's Head, &c. In the Queen's Head there is a room that dines with ease one hundred and twenty persons with fifty servants attending. The houses all crowded at present with Company at the Waters. Here is also a very elegant Theatre, fit to contain fifty people [on the stage], with pit, and pit-boxes, boxes, and gallery. The Company here have frequently Plays, both public and private. When there is to be a public Play, cards are sent to the different houses to give notice to the Company—Take up my quarters at Low Harrowgate, just in the vicinity of the Spaw. Here are also a great number of commodious inns for the company during the watering season, which continues from June to the end of September. Some people continue here all the year round, and think that the waters produce the most powerful effects during hard frost.

The water here is very strongly impregnated with sulphur and salt, and is esteemed the

\* The Ship Inn, nine miles from Leeds, was evidently a well-known coaching inn, as it is marked in Paterson's *Itinerary*.

best mineral in Europe, especially for scorbutic complaints. Its virtues were not discovered till about sixty years ago by the landlord of one of the neighbouring houses, who recommended it to a lady of quality much afflicted with the scurvy, who upon drinking it for two months was miraculously cured; and hence arose at first the character of the water. Buildings were immediately erected; and every year since it has been more and more frequented with people from every quarter, and has produced many wonderful cures, on weak, nervous, scorbutic habits, &c. The water somewhat resembles that of the Well at Moffat, but is much more strongly impregnated. Three English pints taken in the morning, at about a fourth of an hour's interval, are supposed to be the medium dose; but the requisite quantity depends much on the habit and complaint of the patient. There are baths also kept at about the temperature of 70°. Bathing produces very powerful good effects; and when the patient takes the bath, less drinking is required.—Dr Hutchison of High Harrowgate and another apothecary generally attend here, and direct the company as to their regimen. The use of spirituous liquors is prohibited; and a little malt liquor or a little wine and water is what is generally used at meals.

After dinner walk up to the moors on the west of Harrowgate. The prospect from the high grounds is extensive (see York Cathedral twenty-two miles off), and rich towards the north east and south-east; but towards the west it is wild as many of our Scottish moors, covered with heath interspersed with the Reindeer lichen, the *Lycopodium selago*, *Scirpus cespitosus*, and other plants common on our Scottish moors. Here also I find the *Lycopodium inundatum*, and *Lysimachia tenella*, &c.—Join a number of gentlemen at supper, and get some information with respect to the company just now at the waters.

Thursday, 20th August. Harrowgate. Rise in the morning at six A.M., and drink the waters; then ascend the moors again, and inhale the heathy healthy breeze till nine o'clock; after which breakfast heartily. About nine have a fine view of the company at the wells. Harrowgate but a poor place in winter. The inhabitants live chiefly by

what they get from the company in summer. No burning coal within sixteen miles of the place.—Set out at mid-day for York. Arrive at Knaresborough, situated on a rocky bank of the river Nid. In passing the bridge have a fine view of Cobhal Hall, the seat of Sir John Cobhal.\* Pass through Knaresborough, and descend into the plain country of Yorkshire.

(To be continued.)



## The Sun in Relation to Water-Lore.

BY MISS MABEL PEACOCK.

**C**ONTINUALLY increasing discoveries in physical science are adding day by day to the colossal mass of evidence which shows that all the operations and developments taking place in the solar system are more or less directly dependent on the heat and light derived from its central sphere. Lacking the warmth and radiancy of the sun, the earth and her sister-planets would lack everything. Some conception of this fact appears to have dawned on the human mind during the early stages of nature-worship, although traces of a moon-cult, which is, seemingly, still older than the adoration of the sun, may be found in many parts of the world, including our own group of islands.

As soon as man began to reflect, and question himself concerning the striking phenomena which surrounded him and controlled his being, he proceeded to build working theories to account for the action of the great forces holding sway over him and making his existence possible. The chief tenet in many of the theories thus formed was an acknowledgment of the fact that the co-operation of the sun and the lesser powers of the sky is needed to sustain the life of animals and plants in their terrestrial home.

\* A mistake (made, perhaps, in transliterating from the original short-hand) for "Coghill." Paterson's *Itinerary* has "Coghill hall, Coghill, Esq.," but the baronetcy dates from 1778, and the first baronet was succeeded in 1790 by his son, Sir John Coghill. (Burke.)

Hence, we find that in many mythologies the functions of the various deities of heaven, and the airy spaces, overlap and shade off into each other, or intermingle in the most confusing fashion. The sunlight and wind, the storm-cloud and rain-bringing lightning are all regarded with reverence and respect; but sometimes they are directed by beings of near kinship with each other, and sometimes they are governed by one ruler under different aspects.

Many indications of the intimate connection which once existed between the veneration of the sun and that of the heaven-derived water which restores our failing springs and streams are observable in the common superstitions of Europe and Asia; while they may also be discovered in beliefs which originated and expanded far beyond the influence of the white and yellow races. One of the Inca myths of the ancient Peruvian religion, for instance, connects together the sun, water, and social progress. The sun, we are told, took pity on the gross and savage condition of men, and sent them two of his children, Manco Capac, and Mama Oglo, to establish his cult among them, and to alleviate their lot. The two emissaries, son and daughter of the sun and moon, rose one day from the depths of the lake Titicaca. These children of celestial light taught agriculture and the principal trades, the art of building cities, roads, and aqueducts [A. Réville, *Lectures on the Origin and Growth of Religion as Illustrated by the Nature Religions of Mexico and Peru*, translated by P. H. Wicksteed, 1884, p. 156]. Another myth relating, apparently, to an earlier creed than that bound up with the civilization of the Incas, speaks of Viracocha, a water-god from what is known of him, whose name is thought to signify *Foam of the sea* or of the *lake*, as rising out of Lake Titicaca, and making the sun, moon, and stars [*Ibid.*, p. 185].

In Sweden the rain which falls in the month of May—the month when the tardiest plant is beginning to waken from its winter-sleep under the beams of the sun—is very highly prized. According to E. L. Rochholz, when King Gustavus III. showed a valuable ring to an East-Gothland peasant, and asked him its probable worth, the man answered:

"Well, not so much as a shower of rain in May" [*Drei Gaugöttinnen*, p. 55]. From the same authority we learn also that German children run out in the rain in May with the idea it will cause them to grow, and cry: "May-rain, make me tall" [p. 57], but that in Mecklenburg it is averred that rain in the first three days of May causes an unfruitful year, though the dew which falls on those days is of peculiar benefit [p. 55].

An old French proverb says of the first of May:

Si Jacques l'apôtre pleure  
Bien peu de glans il meure :

while another speaks of the efficacy of April-rain and May-dew :

Rosée de may, gresil de mars, et pluie d'avril valent  
mieux que le chariot de David.

"Rosée de may" has also been held in high favour in the British Isles from unknown antiquity, and in Germany it bestows physical beauty, the power of attraction in affairs of the heart, and long life [*Drei Gaugöttinnen*, p. 57]. Rochholz also says that country people think that if a heavy dew falls on St. Walburg's night, the night between the thirtieth of April and the first of May, a good harvest will result. But if dew is lacking, or should there be a rime-frost, the crops will fail. Even when the hay appears to thrive it will have no nourishment in it, for it has had no May-dew. It is better to have half the yield with May-dew or rain on it on St. Walburg's night than a double crop without it [p. 54]. The ground on which this notion is based becomes sufficiently clear when it is understood that St. Walburg is believed to be a Christianized form of a heathen goddess of growth and fertility. As is also the case with her fellow saints, Verena and Gertrude, the legends connected with the worship of Walburg are distinguished by an unmistakably pagan impress. Possibly in origin she may have been the feminine counterpart of an old Aryan moon-god, for the primeval faith connected with the changeful light which at times appears to dispel the horrors of nocturnal darkness, and at times vanishes, seems to have been closely allied with water-worship, and with the vegetation

so dependent on water for existence. The moon, like the sun, in sinking earthward at setting, enters the nether-world, from which the rain-born springs and the plants they nourish both arise. It would not be surprising, then, to discover that the closely-linked adoration of springs and trees had its foundation in sentiments interwoven with the earliest recognition of light as something divine.

Another obvious manner in which the worship of the heavenly bodies is bound up with that of water is that they may be seen reflected on its surface. It is well-known that certain uncivilized peoples, in whom the faculty of observing and reasoning with accuracy is still in a rudimentary condition, cling to the supposition that the image of a man seen on a pool is his spirit, or at any rate one of his spirits, and similarly, the face of the moon, or sun, showing on water may be considered as the phantom essence of the luminary itself. The Caribs, those pitiless sea-rovers of the New World, who revelled in bloodshed from mere delight in slaughter, adored a moon-god, and celebrated the first quarter of the moon by a dance. They also rubbed their eyes with dew falling at that time, as they imagined it to be an infallible remedy for diseases connected with the sight [Réville, *Les Religions des Peuples Non-Civilisés*, 1883, i., p. 349], a detail which shows how widely prevalent is the conception that dew or rain collected at a favourable period is, like water from a sacred well, a sure means of alleviating maladies affecting the vision.

Easter-dew, in common with Midsummer-dew, is still credited with curative properties among the Teutons of the mainland of Europe; probably because several ancient solar superstitions rightly belonging to the spring equinox have become affixed to Easter. It has been forgotten, however, that the morning dew of the great world-tree in the northern god-lore was a sweet and wonderful food, and that the dew of the morning was in repute during the Christian Middle Ages for its strangely nourishing qualities, a belief which may be compared with the ancient Mexican theory that morning-dew cured catarrh in newly-born children [H. H. Bancroft, *The Native Races of the*



*Pacific States of North America*, 1875, iii., p. 599].

The relationship between the sun and water comes out very clearly in a custom mentioned by Rochholz in his *Deutscher Glaube und Brauch*, 1867, i., p. 77: "In the neighbourhood of Eifel," he says, "on the occurrence of an eclipse of the sun the flocks were driven home from the meadow, and the village wells were covered, in the belief that poison would fall from heaven." And conversely, there are innumerable instances of springs being specially resorted to at St. John's-tide, when the solar orb is at the culminating point of power, and is inundating the earth with mysterious influences.

In central France on June 24 many plants acquire miraculous properties, and the meadow-dew, collected and carried to the most ungrateful soil, gives it long-lasting fruitfulness. Moreover, if early on the morning of this day, you draw water, before all your neighbours, from the village spring, you will find it an inexhaustible source of good fortune for the whole year [Laisnel de la Salle, *Croyances et Légendes du Centre de la France*, i., p. 96]. In Normandy, Brittany, and the Pyrenees, it is customary to roll in the dew, or bathe in wells at St. John's-tide [*Drei Gaugöttinnen*, p. 59], but in some parts of Germany May-water is preferred, for on May 1 the mothers dip their children into a spring near St. Walburg's Chapel at Helgenbronn, not far from Leimen in Alsace [*Ibid.*, p. 60]. Portuguese folklore represents the spirits who haunt springs in the form of Moorish maidens as sometimes showing themselves to mortals at the festival of St. John, and it was at the same midsummer season that the ceremonies which suggest the probable origin of our proverb about "setting the Thames on fire," were formerly practised. Rochholz, when speaking of need-fire, the manufacture of which was frequently and severely forbidden after the time of Karl the Great, states that whoever examines many of the older peasants' houses in upper Surenthal and Winenthal will frequently notice a pair, or even a whole line of old drilled holes standing opposite each other in both the door-jambs of the barn or stable. These holes are to some degree rounded and polished, but they are also partly burnt and

charred. They are to be most frequently found in buildings situated in a particularly narrow place in a closed-in village street, or else on a stream in the ravine, and thus they cannot be easily avoided in ascending or descending the valley. On asking the origin and reason of these fire-holes in the door-posts, the stranger receives the singular answer that they were made for the *Ankenmilch bohren*, which was a game once customary among village lads, though now forbidden on account of the danger from fire. "A fortunate accident," says Rochholz, "supplies us with the most exact account of the execution and the purpose of this supposed boyish sport, and what follows here is faithfully founded on the description given by a Catholic peasant from the Amt of Münster, in Luzern, from his own youthful recollections." The author then relates that at the time of the summer solstice, *i.e.*, at St. John's-tide, the lads of the place used to seek out a house whose position on a small stream in the narrow part of the valley was suitable, and whose owner agreed to the game beforehand. When there was opportunity for choice a well-to-do house was selected, able to feast the whole company at the end of the proceedings. As evening approached holes were bored at the same height in both the door-posts, a stout wooden bar (*Stange*), capable of affording resistance, was fixed in them across the doorway, and was plugged at both ends with tow saturated with resin and oil. Next a rope was hitched round it in a single loop, and two young fellows, who were brothers, or who had the same baptismal name, and were of the same age, seized the ends of the rope and pulled it alternately, making the bar revolve backwards and forwards, like the beam of a mill-wheel. Through the swif't turning of the bar, and the chafing of the rope, smoke and flame gradually burst out in both the drill-holes, and were fed and increased by tinder kept in readiness. At last the desired new and unsullied fire was obtained, and was greeted by a general cry of gladness, certain sentences and rhymes being also repeated and sung. Then the inflammatory materials which had already been begged and collected together in the village, and piled up at hand, were seized on. The heaps of bean-straw,

waste of hemp and flax, worn-out baskets and *Zeinen* were set ablaze, and flamed down the narrow street in a double row, lighting up the two sides of the ravine. The stream also had burning trusses carried down to it on boards and in baskets, which it whirled gaily down the valley, accompanied by a well-known jocular rhyming question of the lads, which signified "Who has fired the river Rhine to-day, and who has extinguished it again?" While the reflection of the fiery trusses lit up the shores, a wild, enthusiastic merriment seized on the spirits of the young men. Having pine-torches in readiness, they kindled them at the newly-obtained flame, and ran with them in a long line out into the meadows to fumigate them. This was the *Weidbräuki*, the fumigation of the cattle pasture, by which harmful field-spectres and women bewitching milch-kine were driven away. The torches were finally thrown on a heap and burnt together at a boundary of the pasture, and the place was on that account called the *Feuerbraschlete*. Then, on the way back, the ashes were strewed on the sown fields to make them fruitful (*Deutscher Glaube und Brauch*, 1867, ii., pp. 145, 146). Here we find an ancient and widely-spread method of obtaining ceremonial fire connected with water, and examples of cognate practices are not wanting. In a description, quoted by M. Gaidoz, of the St. John's-tide festival at Basse-Kontz, in the arrondissement of Thionville, as it took place June 23, 1822, we read that the blazing straw-padded wheel, which once represented the sun, and which still formed the chief object of interest, was guided into the Moselle in its descent of the Stromberg, to be extinguished in the river. It was only rarely that those in charge of the wheel could succeed in their aim and bring it to the water-side, on account of the difficulty of the ground; but in 1822 they had this glory, so the vintage was abundant, and concluded in fine weather. To the minds of many of the inhabitants the fortunate journey of the wheel was an assured presage [H. Gaidoz, *Études de Mythologie Gauloise: Le Dieu Gaulois du Soleil*, 1886, p. 9]. At Trèves, also, a ceremony precisely similar to that at Kontz took place, but not at Midsummer. It was held on the first Sunday of carnival, which in this instance

probably represents the spring equinox. A flaming wheel was rolled down the Marxberg into the Moselle, two corporations, that of the butchers, and that of the weavers, conducting the affair [*Ibid.*, p. 33]. In Poland large fires are, or not many years ago were, lighted in the meadows, and particularly by the side of rivers, at St. John's-tide, and the dances around them are accompanied by the singing of ancient songs [*Specimens of the Polish Poets*, by John Bowring, 1827, p. 56]. The phrase to set the Humber, or the Trent on fire, is sometimes used in Lincolnshire. It may, of course, be a simple modification of the proverb relating to the Thames, but it is quite possible that all these three streams were, at a not very remote period, connected with rites allied to the old worship of the sun and fire.

Many other ecclesiastical feasts, besides that kept in memory of the birth of John the Baptist, used to be devoted to the visitation of certain wells. A great number of these days of pilgrimage had their prototypes in the nature-festivals, which in the old heathen days had fallen somewhere about the same season as the Christian saint's day did at a later period.

One of the most interesting beliefs relating to well-lore is that many healing springs are specially beneficial to children. The foundation of this idea has yet to be discovered. It may have arisen from the respect paid to water as the terrestrial supporter of growth and reproduction, to whose special action, in co-operation with its allies, the heat and light from above, all vegetable life, and with it all animal life, owed its power of flourishing and increasing on the earth. The child from the London slums when taken into the country protests against drinking milk from a "nasty, dirty old cow," and demands that the fluid shall be obtained from a "nice white marble slab, like the one from which mother buys it." But the early myth-makers fell into no mistake of this kind, whatever their errors of understanding may have been. Such misconceptions are only possible to the barbarians of a complicated state of society. The savage pure and simple knows otherwise. Unconsciously formed deductions from experience have taught him that milk

depends on the cow, the cow and her kind on grass, the grass on the earth, water, and sunshine, which he adores. Hence, it may be, fertility, and with it lately-born and immature creatures, are connected with springs and streams. Anyhow, it is an observable fact, that many medicinal waters are regarded as of singular virtue where children are concerned. Among the French holy-wells held to be of great benefit to children, is that of St. Deicola, in the commune of St. Germain, near Lure [Margaret Stokes, *Three Months in the Forests of France*, 1895, p. 48]. St. Fillan's Well at Killallan, in Renfrewshire, was also once resorted to by country-women seeking health for their weak and rickety children, whom they bathed in it; and it is believed that the water used in baptisms at the church was anciently drawn from the spring [*Traces of the Cultus of St. Fillan at Killallan*, from the Proceedings of the Society of Antiquaries of Scotland, p. 254]. The custom of taking baptismal water from a holy-well is probably wide-spread. In Cornwall it used to be familiar enough, and there is little reason to doubt that many instances of it might be found on the Continent. At first sight the usage appears to be entirely Christian, yet it has to be remembered that the heathen Norsemen practised a rite strangely like infant baptism, and that instances of a similar observance reach us from distant America. At the conclusion of the ceremonies connected with giving it a name, the Guatemalan, or Pipile infant, with its mother, was taken to a fountain or river, near a fall if possible, to be bathed; and during the bath incense, birds, or cacao were offered to the water, apparently with a view of gaining the good will of the god of that element [Bancroft, ii., p. 681]. Similarly, soon after a child was born among the Zapotecs and other uncivilized tribes inhabiting the isthmus of Tehuantepec, the parents, accompanied by friends and relatives, carried it to the nearest water, where it was immersed, while at the same time they invoked the inhabitants of the water to extend their protection to the child, and in like manner afterwards prayed to the animals of the land [*Ibid.*, i., p. 681]. Among the Southern Mexicans "young children also underwent a kind of baptismal ceremony.

The Mayas believed that ablution washed away all evil; previous to the ceremony the parents fasted three days, and they were particular to select what they considered a lucky day. The age at which the rite was performed was between three and twelve years, and no one could marry until he had been baptized" [*Ibid.*, i., p. 664]. There were also rites of a terrible nature which linked together young children and water in the New World. The sacrifice of children to the deities of water formed one of the most abhorrent features of the detestable Aztec religion—a religion which, in spite of the intellectual and moral attainments of its professors in many respects, was an example of the most ghastly and blood-stained idolatry ever preserved from the condition of savagery to be exaggerated in ferocity till it became the curse of a people far advanced towards civilization. Had the faith supported by the rulers of Mexico been on the one hand less cruel, and on the other less ascetic, the history of the European invasion of Central America might have been entirely different. The Aztec feast of the month of "the diminishing of the waters," or as it was called in some parts "the burning of the trees, or mountains," was celebrated in honour of the Tlalocs, gods of rains and waters. At this feast a great number of sucking-infants were sacrificed, some upon certain high mountains, others in a whirlpool in the lake of Mexico. The little ones were borne to their death upon gorgeous litters, and were themselves decked in a splendid manner. The people wept as they were carried by, yet it is said that the flesh of the little victims was eaten by the priests and chief men, ritual cannibalism being one of the loathsome characteristics of the Mexican creed. At another feast in honour of the same powers, several little boys were shut up in a cavern to die of fear and hunger, and at yet another, more children were sacrificed, and offerings of fruit and flowers were made, to prevail on the Tlalocs to send rain; while on the tenth day of the month called Quecholli, hunters celebrated the hunting-festival of Mixcoatl, god of the chase, on Mount Cacatepec, when the spirits of the children offered up to the rain-gods, whose dwelling was upon the high mountains, were supposed to descend upon

the hunters, and make them strong and fortunate [Bancroft, ii., pp. 305, 308, 315, 336]. The world-wide superstition of immolating human beings to secure weather favourable to the crops has almost died out in Europe, but it is still a Roumanian custom to induce the fall of rain by throwing the clay figure of a child into water.

This usage is very significant, and it is not surprising to learn that quite lately two children were tried and found guilty for drowning a little companion during a drought to secure the wished for showers [*Folk-lore*, vi., p. 57].



### The Use of the Comb in Church Ceremonies.

BY HENRY JOHN FEASEY.

**T**HE ritual use of the comb in the ceremonial of the Church, especially as part of the ceremonial washing in the case of English prelates, is of very ancient usage, and one common, if not universal, in the cathedral and abbatial churches in England, and in at least one diocese, that of Viviers, in France.\*

Its use in England dates back at least to Saxon, if not to even earlier times. William of Malmesbury, describing the death of St. Lanzo, Prior of St. Pancras, Lewes, and monk of Cluni, says: Having washed his hands and combed his hair he entered the oratory to hear Mass. The Pontifical of Christopher Bainbridge† attests to its use by bishops down to as late as the Reformation period in the sixteenth century.

From a note of Archbishop Laud we learn that the use of the comb formed part of the process of the coronation ceremonial of King Charles I., which says, the King "caled to see y<sup>e</sup> combe and vsed it."‡ This comb was in all probability the ivory comb of St. Edward the Confessor, with which the consecrating archbishop was wont to stroke

back the king's hair during the coronation ceremony. A still later survival of at least the idea which prompted the ancient usage is thought by some to be found in the fact that within living memory, in at least some Roman Catholic churches in England, priests about to approach the altar to celebrate High Mass invariably powdered their hair.

Lanfranc, Archbishop of Canterbury (A.D. 1089), frequently enjoins that all the monks are to wash and comb their hair before every ecclesiastical function, and so the quasi-ritual use of the comb in the case of abbots is the more readily understood. Its use by the Abbot of Westminster is attested by the *Consuetudinary of Ware*,\* and the *Liber Eveshamensis*† mentions the use of the comb more than once, it being part of the Evesham ritual that on the more solemn occasions the abbot's hair was to be combed in the sacristy before Vespers, before the solemn chanting of the Gospel at the conclusion of Mattins, and presumably also before Mass. Careful directions are given for the process, the *manitergium* or gremial being placed over his shoulders during the performance.

It must be remembered that the amice was anciently worn over the head as a hood by ministers (as it is at present in some monastic houses), who would sit during the singing of various parts of the service—e.g., at the Kyrie, Gloria, and Creed—in the sedilia. Upon the rising of the officiant it was the duty of the deacon to remove the amice, and in so doing the hair would be disarranged, and he would comb it. Afterwards this office would be performed in the vestry before he came to the altar, especially in monastic houses. Again the setting on and removing of the bishop's or abbot's mitre would necessarily somewhat disarrange the hair. At the present day the comb is used only at the consecration of a bishop, the Pontifical requiring "an ivory comb" to be provided for the ceremony for the arrangement of the bishop's hair (*mundantur et complanantur capilli*) by the ministers after the anointing of his head with the holy oil and the drying of it with a morsel of bread,

\* Warren, *Celtic Liturgy*, pp. 118 et seq.

† Surtees Society, vol. lxi., p. 3.

‡ *Coronation of King Charles I.* Henry Bradshaw Society, p. 35, note.

\* Cotton MS., Otho, chap. xi., p. 29.

† *Officium Ecclesiasticum abbatum secundum usum Eveshamensis Monasterii* (H. A. Wilson). Henry Bradshaw Society, vol. vi., 1893.

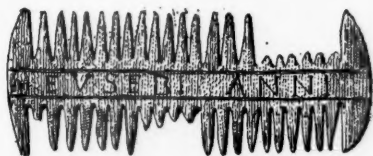


the collar of the vestment being protected by a piece of linen.

Anciently the comb was to be found in every church, and was used by bishops, priests, and clerics alike for combing their hair before celebrating the services of the Church; just as in the great farmhouses of last century a family comb was wont to be chained to a post for the use of the hinds in general when they came in to their meals. The clergy, however, would each seem to have had his own, which was buried with him at his decease.\*

The ivory or metal combs found in the graves of mediæval clergy are said to have been those with which the first tonsure was made, such as mentioned in the inventory of the goods of Westminster Abbey at the Dissolution: "A combe of ivory servyng for prestes when yei fyrst say messe."

Combs have been frequently found in Anglo-Saxon graves of both men and women, a proof that all branches of the Teutonic family paid great attention to their hair. Those preserved are usually of bone, sometimes single, sometimes double. One from Kingston Down, Kent (in the Faussett Collection), has two guards for the protection of its teeth from damage when not in use. It is engraved in Wright's *Essays on Archaeological Subjects*. London: Smith, 1861.†



LITURGICAL COMB FROM THE CATACOMBS  
AT ROME.

Mabillon,‡ quoting the *Ordo Romanus*, directs: "Ipso Pontifice super faldistorio residente, diaconus et subdiaconus accipientes

\* See *Combs Buried with the Dead*, by the late Rev. R. S. Hawker, Vicar of Morwenstowe, Cornwall; also Rock, *Church of our Fathers*, vol. ii., pp. 121-126, and Sir Thomas Browne's *Hydriotaphia*, given in *Notes and Queries*, First Series, ii. 230, 269, 365.

† See *Chaldea* (Ragozin), "Story of the Nations" Series, Fig. 31, p. 850, for an engraving of an ancient comb.

‡ *Museum Italicum*, Part II., p. 288.  
VOL. XXXII.



THE COMB OF ST. LUPUS, PRESERVED IN THE  
CATHEDRAL OF SENS.\*

ab acolythis tobaleam suam et pecten, extendant tobaleam circa collum et caput ejus leviter et decenter pectinent, videlicet primo diaconus a parte dextra, deinde subdiaconus a sinistra."

The Pontifical of Ratold, written before the year 986, directs: "Deinde ministretur ei (Episcopo) aqua ad manus et pecten ad caput," after putting on the episcopal tunic.

Du Fresne says: "Pecten inter ministeria sacra recensetur, quo scilicet sacerdotes de

\* It may be of interest to mention that this beautiful comb was recently used (on September 8th last) at the consecration at Sens of Monseigneur Léon Dizien, Bishop of Amiens.

clerici, antequam in ecclesiam procederent, crines pecterent. E quibus colligitur monachos, tunc temporis, non omnino toneos fuisse."

Du Cange refers to a ritual belonging in A.D. 1360 to the church of Viviers, France, where it would appear that the celebrant's hair was combed by the deacon, not only in the vestry, but several times during divine service: "Sacra celebraturus sedet dum in choro Kyrie, Gloria, et Credo, decantur; unde quoties assurgebat ipse capillos pectebat diaconus, amoto ejus capello seu almucio, licet id officii jam in Secretario antequam ad altare procederet sollicito ei præstisset."

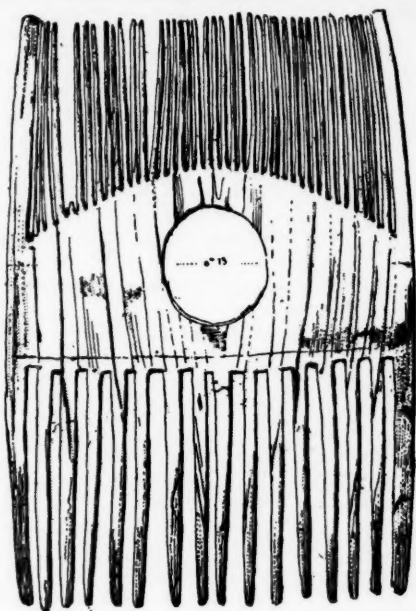
The Sarum Pontifical orders: "Tobalia et pecten ad pectinandum," to be provided for the consecration of a bishop elect.\*

These ecclesiastical combs were generally of ivory, but often of the precious metals, carved and adorned with Scriptural and other subjects, and further adorned and enriched with precious stones.

In the tombs of the martyrs in the catacombs combs of ivory or of boxwood have been found which bear witness to this ancient custom of the priest arranging his hair before approaching the altar. Their frequent mention in church inventories and other ecclesiastical documents of the Middle Ages bear an additional witness to the same fact.

One of the earliest (twelfth century?) of these combs known now to exist is the large ivory comb, set with precious stones and sculptured with figures of animals, preserved in Sens Cathedral. On it are cut the words PECTEN S. LVPI. It is supposed to have belonged to St. Lupus, Bishop of Sens, in the seventh century. Another is still kept in the cathedral of Monza, the gift of Queen Theodolina at the end of the sixth century; and a third, that of St. Hubert, in the *trésor* of his church. The comb of St. Gauzelin is in the museum at Nancy. An English one of the eleventh century is preserved in the British Museum. It is of ivory, carved in open work with men and interlacing scroll ornament. Unfortunately, it is not perfect. Mr. Maskell in his *South Kensington Handbook* on "Ivories," has given an engraving of this comb at page 70. Pope Boniface sent to Queen Ethelberga a gift of a gilt ivory comb.

\* See also *Durandus*, and Maskell's *Mon. Rit.*



THE COMB OF ST. CUTHBERT, PRESERVED AT DURHAM.

Another comb ascribed to the eleventh century is the comb of Saint Cuthbert (A.D. 687), preserved in the cathedral library of Durham. It is of ivory, and measures  $6\frac{1}{4}$  inches in length, and  $4\frac{1}{2}$  inches in width. It has a double row of teeth, divided by a broad plain band, perforated in the middle with a round hole for the finger. This comb was found with other relics deposited with the body of the saint when his tomb was opened A.D. 1827, and is figured full size in Raine's *St. Cuthbert*, plate vii. Reginald of Durham\* alludes to such a comb belonging to the saint, which was placed in his coffin at his burial.

Seven or eight of these combs are specified as belonging to the Cathedral of St. Paul, in 1222: three large, three small; one "pecten pulchrum," the gift of John de Chishulle, and three others; all of ivory.† In the treasury of the Cathedral Church of Canterbury in 1315 there were as many, and also one, the gift of Henry IV., set with precious stones.‡

\* *De Admir. S. Cuthberti Virtut*, p. 89.

† Dugdale's *St. Paul's*.    ‡ Dart's *Canterbury*.

Raine, in his inventory of the relics at Durham in 1383, mentions the comb of Malachias, the Archbishop (St. Malachi, Archbishop of Armagh, 1143?), the comb

An ivory comb of the fifteenth century, which was in the Magniac Collection, and carved on each side with subjects illustrating the life of Christ, might have been used for ecclesiastical purposes.

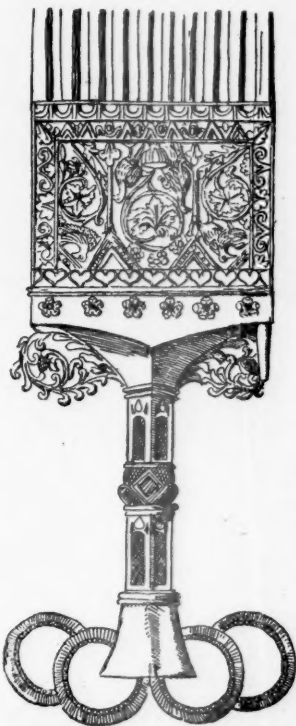
The British Museum has part of another comb, marked as of the fifteenth century, which was found at Romsey Abbey. Two rows of teeth spring from the central backbone, one row being finer than the other, which likewise may have belonged to the sacristy.

Dugdale also mentions "a combe of golde garnishede with small turquases and other course stones weinge with the stones viii. oz. di.," as being among the ornaments



THE COMB OF ST. GAUZELIN, PRESERVED IN THE MUSEUM AT NANCY.

of St. Boysil, the priest (Prior of Melrose, 664), and the ivory comb of St. Dunstan (988); and somewhat later in the register of Glasgow Cathedral is mentioned a precious burse with the combs of St. Kentigern (516-601) and St. Thomas of Canterbury (1170). In the reign of Henry VI. the inventory of Selborne Priory, Hants, contained the item: "Item i pecten St. Ricardi."



DRAWING PRESERVED AT THE BIBLIOTHÈQUE NATIONALE, PARIS, OF A LITURGICAL COMB.

carried off by Henry VIII., from Glastonbury Abbey.

At Walling Wells, previous to the Reformation they kept "the comb of St.

Edmund,\* and among the "feigned and superstitious relics" received from William Humfre, one of the churchwardens of Wysborowe Green, August 15, 30 Henry VIII. (1538), was "St. James' comb;"† while in the inventory of churchwardens' accounts of the goods found at Louth, Lincolnshire, appears: "j come of Ivery that was saynt herefridis" (an English abbot or hermit), and in 1552 (6 Edward VI.) at Cheshunt and Pelham Furners, Herts, the King's commissioners found "an ivery comb sufficiently good."‡

The comb of St. Neot is peculiar, being described as of two fingers broad, made of a small bone with the teeth of a fish inserted like those of the jaws of the sea-wolf. St. Neot the Anchorite lived A.D. 877, and his namesake the hermit in Cornwall still earlier, A.D. 429.

A very curious mutilated comb, exhibited in 1764, preserved in the library of the Society of Antiquaries, is engraved in the eighth volume of *Archæologia*.



## The Account-Book of William Wray.

By the REV. J. T. FOWLER, D.C.L., F.S.A.

(Continued from p. 281, vol xxxii.)

### CORRECTION.

For note 1 on p. 279, column 2, substitute this:—

A thrown chair is one turned in a lathe, to "throw" or "thraw" being a Northern word meaning to turn wood, and a "throw" is a turner's lathe (A.S. "bráwan," to twist, to whirl). In Peacock's *Church Furniture* we find "thre thrown cheyars" (p. 186) and "one throwen cheiar" (p. 211). In *Bury Wills* (Camden Society) "ij cheyres, on turnyd and the other crosse" (p. 101). The latter would be made of boards as close stools are made now.

Fo. 30. [Bought of John Gill the 26 of August 1596. i<sup>li</sup> cre. e b. fringe, yet not d<sup>lrd</sup>.]§

Bought of Robt eattenfeild 9 of october 1596. i pece of stroe culler sekeinge, xxvs ;

\* *Letters and Papers, Foreign and Domestic, of Reign of Henry VIII.*, vol. x.

† *Ibid.*, vol. xiii., Part II.

‡ Cussans, *Church Goods in Herts*.

§ Erased.

d. pece of cullerd sekeinge rid white e grene, xis. ; i gr' thrid poyntes, xviii<sup>d</sup>. ; pay<sup>d</sup> e quit.

Bought of W<sup>m</sup> battie, Webster, 9 of october 1598. i pece of cullerd myllo', xlvs. ; p<sup>d</sup> thereof in p't, xxxvs. ; payd in full xs.

Bought of John Gill the 6 of Novebr 1596. [Imp'm' i pece cre. duraunce, xxviii<sup>s</sup>. ; Itē i pece blacke buffyng, xv<sup>s</sup>. vi<sup>d</sup>. ; payd in p't the 29 of Decebr, xxs.]\* : 2 . 4 . 6.†

[Bought of Robt eattenfilde the 9 of Octob' 1596. d. a dosse' pines, i<sup>li</sup> iis. ; e a M. (1,000) whit pines, iii<sup>d</sup>. ; e iii<sup>li</sup> gr. hare buttons, iis. ; e a q' of i<sup>li</sup> safferon, ix<sup>s</sup>. ix<sup>d</sup>. ; p<sup>d</sup> in p' 16 of fabruarie 1596, xs. ; p<sup>d</sup> more in ful payment, vs.

Bought of John Gill the 23 of decebr 1596. Imp'm' i pece purple buffinge, xviii<sup>s</sup>. ; Itē i<sup>li</sup> cre. blacke fringe, viis. ; Itē i<sup>li</sup> blacke fringe, iiiis. ; Itē i<sup>li</sup> gren e black fringe, iis. iii<sup>d</sup>. : 1 . 12 . 4 ; e i pece cre. duraunce, xxviii<sup>s</sup>.]\* : 3 . 0 . 4.†

Bought of James Banks the 2 of March 1596. p<sup>d</sup> more in p't 19 of June 1597 to his wife before his ma', xx<sup>d</sup>. ; d : a pece f. melann, xliiis. ; Itē d : a pece mela', xls. ; Itē one pece of mela', xxxvis. ; su' is viii<sup>d</sup>.<sup>2</sup> : [8 . 0 . 0]‡ ; payeid to James bannckes 14 of aprill, 1597, xxs. ; payd more the 28 of aprill 1597, iii<sup>d</sup>. ; payd more, iii<sup>d</sup>.

Bought of Robt eattenfeild 8 of march Ano. Dmi. 1596. [Imp'm' i pece f. sekeinge, xxvis. ; i pece of f. sekeinge, xxiiiis. ; restes to paye, xixs. ij<sup>d</sup>.]§ ; p<sup>d</sup> e quit thus,

1595.

Fo. 30v. Bought of John Gill the 27 of March 1595. Imp'm' i pece cre. duraunce, xxxiis. ; Itē i pece tawny buffinge, xviii<sup>s</sup>. ; su' is lis.

Bought of robt Eattenfilde the 10 of aprill 1595. Imp'm' i pece stro coler seckynge, xxvs.

Bought of Myles burto' the 13 of aprill 1595. Imp'm' i pece orange tawny buffyng, xvii<sup>s</sup>. ; Itē i<sup>li</sup> redd e blacke fringe, vis. vii<sup>d</sup>.

Bought of robt eattenfilde the 24 of aprill 1595. Imp'm' i pece white seckinge, xxii<sup>s</sup>. ; Itē i pece yallowe, xxs. ; Itē iij oz. colers silke, ix<sup>s</sup>. iii<sup>d</sup>. ; su' lis. iii<sup>d</sup>.

<sup>1</sup> These must have been large and perhaps ornamental pins.

<sup>2</sup> Erased.

† Added in margin.

<sup>3</sup> Comes to £6 1s. 8d.

‡ Added in margin.

§ Erased.



Bought of John Gill the 1 of Maye 1595. Imp'm' i pece gren buffinge, xviii. ; Ite' i pece black buffinge, xvii. ; Ite' i<sup>li</sup> gren e fringe, iiis. iiij<sup>d</sup>. ; su' xxxviis. iiij<sup>d</sup>.

Bought of John Gill the 19 of June 1595. Imp'm' i pece cre. duraunce, xxxiiis. ; Ite' i pece purple buffinge, xviii. ; Ite' i pece blacke buffinge, xvii. ; su' is iii<sup>li</sup>. viis. ; Rhe in p' viis. ; sent by younge lindell the 10 of July 1595, iii<sup>li</sup>.

Bought (of) Robarte eatenfeild 24 of June 1595. j pece stroe cullerd seckeinge, At xxviis. ; j pece stroe cullerd seckeinge, at xxs. ; Ite' i gr' colerd Inkyll peces, iiis. ; Ite' i gr', xxii<sup>d</sup>. ; Ite' vij gr' corded buttons, iiis. vi<sup>d</sup>. ; Ite' iii gr' course Inkell, xxii<sup>d</sup>. ; su' is lvis. ii<sup>d</sup>.

Bought 2 of Julij 1595 i<sup>l</sup> cawuentrie Thrid At vs. ; e i<sup>l</sup> fine cawuentrie thrid, vis. iiij<sup>d</sup>. ; Ite' of W<sup>m</sup> eggelfilde 1 pece whit seckeinge, xxviis. ; su' is xxxvs. iiij<sup>d</sup>.

Bought ii hundreth franche proynes, xls. vi<sup>d</sup>.

Bought of John Gill the 17 of Julij 1595. Imp'm' i pece cre. duraunce, xxxiiis. ; Ite' i pece blacke buffyng, xvii. ; Ite' i pece gren buffyng, xvii. ; su' is iii<sup>li</sup>. vis.

Bought of Robt Gledell the 15 of augst 1595. i pece whit seckynge, xxiiis.

For 31. Bought of John Gill the 21 of auguste 1595. Imp'm' i pece cre. duraunce, xxxiiis. ; Ite' i pece gren buffyng, xvii. ; Ite' i pece blacke buffinge, xvii. ; su' iii<sup>li</sup>. vis.

Bought of Robert Eatenfilde the 9 of octobr 1595. Imp'm' i gr' of brode gerteringe, xvs. ; Ite' i gr' medle diap' or baise, xis. ; Ite' i gr' narrow baise, xs. ; su' is xxxvijs.

Bought of John Gill the 9 of octobr 1595. Imp'm' i pece purple buffinge, xixs. ; Ite' i pece orange tawny buffinge, xvii. ; Ite' iiij<sup>li</sup> of fringe, xiiis. viii<sup>d</sup>. ; su'm is xlixs. viii<sup>d</sup>. ; restes to paye, 30s. ; more the sayme daye of Robt eatenfilde 1 pece stro coler seck, xxviis. ; e viii yeades checker seckynge, vjs. viii<sup>d</sup>. ; su' xxxiis. viii<sup>d</sup>.

Bought of henry eastwoode the 10 of octobr 1595. Ite' one pece ashe-coler seckynge, xxis. ; Ite' of one of yorke iiij dosse' tufte silke lace, ix. iiij<sup>d</sup>. ; Ite' iiij gr' silke buttons, ix. iiij<sup>d</sup>. ; su' is xxxixs. viii<sup>d</sup>. ; Ite' i gr' silke e silver buttons, viis. vi<sup>d</sup>. ; Ite' iij dosse' e ix yeades chen lace, vs. vi<sup>d</sup>. ; Ite' i gr' silke buttons, iis. iiij<sup>d</sup>. ; su' xvs. iiij<sup>d</sup>.

Bought of Robt eatenfilde the 26 of novebr 1595. Imp'm' d : gr' f. cardes,<sup>1</sup> xvii. ; Ite' 1 gr' statute lace, viis. ; su' is xxiiis.

Ite' of John Gill the 8 of Januarij i pece striped bumbasie,<sup>2</sup> xxxiiis.

Bought of Robt Eatenfilde the 16 of Januarij 1595. Imp'm' i gr' statute lace, viis. ; Ite' iiij gr' thred buttons, iis. ; Ite' i li blacke thred, xviii<sup>d</sup>. ; Ite' i pece stroy-coler seckinge, xx'is. ; p<sup>d</sup> in p<sup>n</sup> 15 Januarie, 1595.

Bought of John Gill the 29 of Januarij 1595. Imp'm' i pece f. silke rashe,<sup>3</sup> xls. ; Ite' ii pece cre. duraunce, iii<sup>li</sup>. ; Ite' i pece wadded buffinge, xixs. ; Ite' i pece blacke buffinge, xvii. ; su' is vi<sup>li</sup>. xvs. ; payd in p<sup>n</sup>, xls. ; payd e quit ; sent him the sayme daye iii<sup>li</sup> vs. w<sup>ch</sup> I did owe him before.



## Publications and Proceedings of Archæological Societies.

### PUBLICATIONS.

The first part of vol. xvi. of the Proceedings of the SOCIETY OF ANTIQUARIES has been issued. It covers the period from November 21, 1895, to March 26, 1896. The part contains (besides, of course, much else) an account of a late Celtic sword found at Sadberge, Durham, and exhibited by Dr. Greenwell ; an account of a Romano-British pile-dwelling at Hedsor, in Buckinghamshire, by Mr. A. H. Cocks ; a paper on the "Craft Guilds of Coventry," communicated by Miss M. Dormer Harris ; an account, with illustration, of an early processional crucifix belonging to Sir J. Charles Robinson, and bought by him some years ago in Portugal ; "Notes on a Potter's Kiln at Shobury, Essex," by Mr. C. H. Read, secretary ; the exhibition, by Mr. Lionel Cust, of a hitherto unknown portrait of Shakespeare ; account of a tilting-helm in Haseley Church, Oxfordshire, by Mr. Alfred Billson ; "Notes on the Roman Fortress of Babylon at Kasr-ash-Shammah, near Cairo," by Mr. Somers Clarke ; an account (with a fine collotype photograph) of a medallion, with a portrait of an elderly man, exhibited by Sir J. Charles Robinson (the medallion is encircled by the Garter) ; "The Sforza Missal," by Monsignor Virtue (R.C.), Bishop of Portsmouth ; "Notes on Two Founders Hoards lately discovered in Essex," by Mr. Henry Laver ; "Notes on a Supposed Mithraic Temple discovered at Burham," by Messrs. G. Payne and Frederick James. There are, in addition, numerous excellent illustrations.

<sup>1</sup> Fine cards ; query for what purpose.

<sup>2</sup> Bombasine, a material composed of silk and wool, cotton and wool, or wool alone. From Fr. *bombasin*, Late Lat. *bombasinum*, from *bombyssa*, silk.

<sup>3</sup> Rash is a kind of inferior silk (Halliwell).

Part VII. of the second volume of the Transactions of the MONUMENTAL BRASS SOCIETY has reached us. It contains, *inter alia*, the following items: The second part of the "Brasses of Cambridgeshire," by the Cambridgeshire committee; the sixth part of the "Brasses of Bedfordshire," by Mr. H. K. St. J. Sanderson; "The Matrix of Bishop Beaumont's Brass at Durham," by the Rev. H. E. Field; and "Some Notes on a Brass-rubbing Tour in West Sussex," by Mr. T. Wareing. Illustrations are given of the brasses of Dr. William Town (1486), Fellow, and of Dr. John Argentein (1507), Provost of King's College, Cambridge, both in the college chapel. Also of the brasses of Walter Hewke, Master of Trinity Hall in 1512, and of a nameless Bachelor of Divinity, both in Trinity Hall Chapel.

We have received the first part of vol. xiii. of the Journal of the ROYAL INSTITUTION OF CORNWALL. It is issued as the publication for 1895, and contains, with other shorter notes, the following papers on archaeological subjects: "Further Killigrew Manuscripts relating to the Killigrew Monument at Falmouth," by Mr. Howard Fox; "The Exploration of Carn Brea," by Mr. Thurstan C. Peter (this important paper is very fully illustrated by a number of photographs); "Notes on Ancient Coins," by Mr. J. D. Enys; and "Rude Stone Monuments on Bodmin Moor" (illustrated), by Mr. A. L. Lewis. Besides these papers, the accounts of the meetings and excursions of the society record a good deal of valuable archaeological matter.

Vol. vi., Part I., of the Transactions of the ESSEX ARCHÆOLOGICAL SOCIETY has been issued. It contains the following papers: "Hornchurch Priory," by Mr. J. H. Round; "Roman Pottery Kiln at Shoeburyness" (illustrated), by Mr. H. Laver; "Grymes Dyke, or the Outward Trench of Wyldenhey," also illustrated, and also by Mr. H. Laver; "On the Custom of the Setting-up the Royal Arms in Churches," by Mr. C. F. D. Sperling; "Fitz Lewes of West Horndon and the Brasses at Ingrave," by the Rev. H. L. Elliot (this paper contains facsimiles of rubbings of the brasses); "Essex Field-names" (continued), by Mr. W. C. Chapman. This latter paper, it may be mentioned, affords some very useful material for other students of place-names. The Essex Archæological Society has also issued the title-page and very full index to vol. v. (new series) of the Transactions, as well as a catalogue of the books, pamphlets, periodicals, manuscripts, and scrap collections in the library.

Part II. of vol. vi. of the fifth series of the Journal of the ROYAL SOCIETY OF ANTIQUARIES OF IRELAND contains the following among other papers, all of which are freely illustrated as usual: "Crua Mac Dara, off the Coast of Connemara, with a Notice of its Church, Crosses, and Antiquities," by Mr. Francis J. Bigger; "Dean Swift's Library," by Mr. T. P. Le Fanu; "On Ogham Stones in Kilkenny County," by the Rev. E. Barry; "The Journal of Sir Peter Lewys, 1564 and 1565," by Mr. James Mills; "Prehistoric Stone Forts of Northern Clare," by Mr. T. J. Westropp; "On 'Holed' and Perforated Stones in Ireland,"

by Mr. W. Frazer; also several minor papers under the heading of "Miscellanea." The Journal also contains an appreciative "In Memoriam" notice, with portrait of the late Rev. Father Denis Murphy, whose loss Irish antiquaries especially have recently had to deplore.

#### PROCEEDINGS.

The annual excursion of the GLASGOW ARCHÆOLOGICAL SOCIETY was paid to the Island of Bute. Leaving the Central Station at 8.45, the party crossed from Gourock by the *Lord of the Isles*. On arriving at Rothesay, they were met by the Rev. J. King Thomson, F.S.A.Scot., author of *Bute in the Olden Time*, under whose guidance the day was spent in examining the various objects of antiquarian interest the island contains. Driving through Ascog and the grounds of Mount Stuart, the first halt was made at the Standing Stones of Langachorad, near Kingarth Manse. The circle originally consisted of nine stones, and must have been about 86 feet in diameter. Only three of the stones remain, one being conglomerate, the others whin. The peculiar shape of the first of these suggested the theory thrown out by Mr. Honeyman that it had at one time formed into a cross, though it is now so much weathered that no trace of the sacred emblem can be discovered in it. The members next proceeded to Dunagoil, a picturesque headland crossed by the remains of a fort, part of the defences of which consist of a vitrified wall. This wall runs to about 28½ feet in length, and is 6 feet thick. As it at present exists, the vitrification would seem to have been applied from the outer face, extending inwards to the depth of 5 feet 6 inches. Behind this the remaining portion of the wall, 3 feet 6 inches broad, is unvitrified. As, however, the generally accepted theory with regard to such structures is that the heat was applied from above, this would point to there having formerly been a similar unvitrified portion of wall on the seaward side, though this has disappeared. From Dunagoil the society went on to the ruined church of St. Blane, which stands on an elevated site about three miles south from the present parish church of Kingarth. It consists of an oblong nave 50 feet 6 inches in length internally, and a choir 26 feet 3 inches long, separated by a fine chancel arch of Norman design. Much interest was excited by the peculiar character of portions of the masonry of the choir. For 13 feet east of the chancel arch the walls consist of fine square-dressed ashlar work similar to the Norman masonry of the nave; but beyond this they are constructed in their lower portions of whinstone rubble-work, with square dressed free-stone of an inferior character above. Mr. Galloway's theory in regard to this was that the whinstone work was part of a very ancient edifice, and that the Norman work was built on to it. It seems, however, more probable that the whole choir was formerly Norman throughout, and that by some accident the eastern portion fell into a ruinous condition, and was rebuilt in an inferior style. The society noticed with much satisfaction the steps which are being taken by the Marquis of Bute to preserve the remains at St. Blane's. The walls were rapidly crumbling away, but operations are now in progress by which this unfortunate condition of affairs will be effectually arrested. Interesting ex-

cavations are also being made by Lord Bute on the site of part of the domestic buildings formerly occupied by the monastic community, and in which latterly stood the manse of the ministers of Kingarth. These excavations have resulted in laying bare the foundations of various buildings, evidently early in date, and very curious in their arrangement. Further light will probably be thrown on their character as the work proceeds. It may also be mentioned that the foundations of the great wall which surrounded the conventual precincts have been traced out and exposed. All who are interested in early Scottish ecclesiology must view with satisfaction the admirable work at present being carried on by Lord Bute at St. Blane's. Returning to Rothesay *via* Loch Fad, a visit was next paid to the parish church, where the shaft of the Celtic cross standing in the churchyard was inspected, its most remarkable feature being the existence of a tenon at the upper end, indicating that the cross had been jointed on. The monuments in the ruined cathedral of St. Mary were examined; but in view of the limited time at the disposal of the members, it was found impossible to enter on the consideration of the disputed points in regard to their date and the persons they are supposed to commemorate. The castle was next visited, and the members afterwards dined together in the Royal Hotel.



## Reviews and Notices of New Books.

[Publishers are requested to be so good as always to mark clearly the prices of books sent for review, as these notices are intended to be a practical aid to book-buying readers.]

A STUDENT'S PASTIME. Being a Select Series of Articles reprinted from *Notes and Queries*. By the Rev. Walter W. Skeat, Litt. D., etc. Pp. lxxxiv, 410. Oxford: Clarendon Press. London: Henry Frowd. Price 7s. 6d. net.

Most readers of the *Antiquary* arc, we presume, familiar with the columns of our very useful contemporary, *Notes and Queries*. We do not think that we are exaggerating the facts, or stating anything which other correspondents of *Notes and Queries* will consider a disparagement of their contributions to its pages, if we say that of late years the most valuable articles in *Notes and Queries* have been those sent by Professor Skeat on etymology and relative matters.

The process of the evolution of the Professor's notes is amusing and instructive withal, and often is very much as follows: Some past-master in the craft of guess-work sends to our contemporary a highly ingenious solution of a puzzle in etymology, so very simple, ingenious, and conclusive, that there can be no escape from a conviction on the sender's part, that it is the correct answer to a question which he himself or someone else has raised. In due time comes a short, pithy note from Professor Skeat, demolishing the ingenious guess in stern, though courteous sentences. The Professor does not, however, content himself with destroying other people's work, but

always takes care to give the true explanation, which he further strengthens by an appeal to conclusive evidence. It is remarkable how much valuable information has been elicited in this roundabout way from the Bosworth Professor of Anglo-Saxon. Nor is he unsparing of his own mistakes, as, for instance, the blunt opening (page 361) of a note on "Flotsam" and "Jetsam": "The explanations of these words in my *Dictionary* are incorrect," etc.

In the volume before us Professor Skeat has gathered together his contributions to *Notes and Queries*, and has added to them what we may call a short autobiography of himself. Some people, especially in America, prefix their portraits to the books they publish. Professor Skeat, by a happier instinct, has begun by giving the reader a short account of himself, and of how he gradually came to study that subject of which he is the most profoundly learned English scholar of the day.

Many years ago Trench's *Study of Words* became a widely popular work, and led many persons for the first time to think seriously of their mother tongue and the history of words. We shall be greatly surprised if the present volume does not act as a like stimulus to the study of English, and become as widely popular as Archbishop Trench's work formerly was. We cannot attempt to furnish any idea of the vast amount of learned matter given in very terse and plain English in Professor Skeat's book, any more than we can give any idea of the number of different subjects which are dealt with. All we can say is, that antiquaries especially will find much that is of value and use to them conveniently brought together within the two covers of a single volume, without having to hunt through the indexes of the volumes of *Notes and Queries* for themselves.

We observe in this connection that a word in fairly common use in modern antiquarian works, "fylfot," cannot be traced back even for a few years. Professor Skeat has asked for a quotation as old as 1800, but has not been able to get one! Another point perhaps worth mentioning is in regard to Whit Sunday. This Professor Skeat has conclusively settled as meaning "White Sunday"; but, it may be asked, how did that name become applied to the festival of Pentecost? We have never seen any quite satisfactory explanation, and it is a matter which needs clearing up by those who have made early ecclesiastical matters their special study.

Perhaps as interesting a note as any is one on Anglo-Saxon numerals, which, being fairly brief, we venture to quote at length. Professor Skeat says: "Many persons who have some acquaintance with Anglo-Saxon must have felt puzzled at the curious use of the prefix *hund-* before certain numerals. If we write out the numbers 10, 20, 30, etc., up to 120 in Anglo-Saxon, the series is *ten, twentig, thritig, fowertig*, etc.; or, expressing the same as nearly as possible in modern English spelling, we get the series *ten, twenty, thirty, forty, fifty, sixty, hund-seventy, hund-eighty, hund-ninety, hund* (also *hundred*), *hund-eleventy*, and finally *hund-twelvety* (also called *hund-twenty*). As to the meaning of *hund* there is no dispute: it means *decade*, and is merely short for Goth. *taihund*, just as Latin *centum* is short for *decen-tum*. But the point is, Why should the prefix *hund-* begin with the numeral *seventy* rather than at any

other point? The answer is, simply, that this reckoning refers to a time when what is still called 'the great hundred,' meaning thereby 120, was in common use. The half of 120 is 60, and up to 60 all is straightforward. But after passing 60 we come to a reckoning of the latter half of the 120, involving higher numbers, and, perhaps, regarded as requiring greater effort to ensure accuracy. These higher numbers were, of course, in less frequent use than the lower ones, and the prefix served to mark the notion that 60, the half of 120, had been reached, and that the reckoning of the second half had begun. Hence the prefix was continued throughout, with the necessary introduction of the curious words *eleventy* and *twelvety*, which are perfectly legitimate formations, and were once in actual use. The most curious use of the 'great hundred' which I remember to have met with is in Fitzherbert's *Husbandry* (E. D. S., p. 41), where the symbol 'C' is actually used to denote, not 100, but 120.

"This consideration of reckoning by the 'great hundred' is the obvious explanation of the French numerals also. The reckoning is regular up to *soixante*, i.e., 60, after that the reckoning proceeds by scores, the next resting-place (so to speak) being *quatre vingt*, or four score, whilst 70 is merely called *soixante-dix*, 60 and 10. So also 90 is 80 and 10, or *quatre-vingt-dix*, and the next score is reached at 100. The last score of the 'great hundred' is reached at 120, formerly called *six vingts*, or six score, as noted by Littré, s.v. 'Vingt.'"

We feel tempted, too, did our space permit of it, to cite a few of the guesses which Professor Skeat has overthrown. Wonderful, indeed, many of them are, but we think they all fade into obscurity before one which derives the figure called "amperzand" from "and-pussy-and" because its shape (&) suggests a pussy-cat sitting up and raising its fore-paw!

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RAMBLING SKETCHES FROM THE OLD CHURCHES OF THE DIOCESE OF LLANDAFF. By Charles R. Fowler, F.R.I.B.A. Vellum; 17 plates, with 17 pp. of descriptive notes, and 4 pp. of general description. Cardiff: The "Western Mail" Co., Limited. Price, 25s.

This welcome addition to the topographical literature of the counties of Glamorgan and Monmouth is exactly what it professes to be. It does not pretend to be a complete work on all, or, in fact, on any of the old churches of the diocese. The author, in his rambles among these old fanes, sketched and measured such features as pleased and interested him, and without any prior intention of publication. It is essentially a book of drawings; the letter-press, with the exception of four pages of "A General Description of the Churches in the Diocese," takes the form of descriptive notes interleaved with the plates. These drawings were produced with great care. The author states in his preface, that most of them are to scale, and that he can "answer for their accuracy even to the joints and dressings." His aim has been the architectural veracity of his examples; and he has avoided the use of the rule in his drawings, as it "gives to ancient work a modern feeling." The plates are photo-lithograph reductions of these drawings; and although they are well and clearly printed,

as is the letter-press also, they do not fully represent the excellence of the originals, the amount of reduction being great. The author, however, hopes to be able to publish fifty sets of the plates on a larger scale, at 21s. the set. The seventeen plates contain some 200 separate sketches. The concise "General Description" is of considerable antiquarian value—all the more so as the churches of this diocese have received but scant notice. Mr. Fowler confines himself to the smaller and more ordinary churches, and remarks they are chiefly of severe type, consisting of nave, chancel, south porch, and a bell-cote on the western gable. When a tower is present, it is usually at the west end, of semi-fortified character, with no original external entrance, and surmounted with a saddle-back roof. The smaller churches have little ornamentation outside or inside. The porches are mostly large and coarsely built; the roofs open-timbered, rarely boarded and panelled, except in Monmouthshire; rood-screens, piscinæ, and stoups, fairly numerous, but sedilia few. Niches occur occasionally on the north side of the east window, or the south side of the chancel arch. Painted glass and ironwork are very rare. The author appears to have given chief attention to the fonts, of which he has illustrated about fifty; and he remarks that they are mostly of simple Norman character, several having been decorated at later dates. He notes the presence of several "low-side" and kindred openings, but it is doubtful whether many readers of this magazine will concur with him in suggesting "Lepers' sacramental and confessional window" as a suitable term for this class of openings, or in attributing to Cromwell's time the destruction of most of the altar slabs.

Altogether Mr. Fowler is to be congratulated on this his "first attempt at publication," and it is to be hoped that it will soon be followed by the second volume which he half promises in his preface.

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We have to acknowledge the receipt of copies of the *Bucks, Berks, and Oxon Archaeological Journal*, the *East Anglian*, the *Essex Review*, the *Fenland*, the *Notts and Derbyshire*, and the *Middlesex and Hertfordshire Notes and Queries*, all of which continue to do excellent and useful work in their different spheres. We are afraid that the *Middlesex and Hertfordshire Notes and Queries* is not receiving the support it deserves, and which there ought to be no difficulty in its securing. It is edited by Mr. W. J. Hardy, F.S.A., alone a sufficient guarantee for the excellence of its contents. We may add, for the benefit of those who may wish to take it, that it is now published by Messrs. Hardy and Page, at 44, Chancery Lane.

From Mr. Harry Hems of Exeter we have received a copy of "Rood and Other Screens in Devonshire Churches," being a paper read before the Society of Architects in April last. We need scarcely add that it contains much useful and interesting information.

**NOTE TO PUBLISHERS.**—We shall be particularly obliged to publishers if they will always state the price of books sent for review.

It would be well if those proposing to submit MSS. would first write to the Editor stating the subject and manner of treatment.